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**Trip Report – February 2020 Sampling Event  
Removal Assessment**

**Weirton BOP Implosion Site  
Weirton, Hancock County, West Virginia**



**EPA Region III  
*START V - West*  
Superfund Technical Assessment and Response Team**

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U.S. Environmental Protection Agency  
Region III  
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EPA Work Assigner: Deborah Lindsey  
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## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION .....	1
2.0 SITE DESCRIPTION .....	1
3.0 BACKGROUND .....	2
4.0 INVESTIGATION ACTIVITIES.....	4
4.1 Site Reconnaissance .....	4
4.2 Planning and Pre-Mobilization Activities .....	4
4.3 Field Sampling Activities.....	5
5.0 ANALYTICAL RESULTS .....	6
5.1 Data Validation.....	7
5.2 TAL Metals, Mercury and Hexavalent Chromium Results .....	8
5.2.1 Comparison To EPA's Removal Management Levels.....	8
5.2.1.1 RML THQ=3 Exceedances.....	8
5.2.1.2 RML THQ=1.0 Exceedances.....	9
5.2.2 Comparison to Background Levels .....	9
5.2.2.1 Natural Background Levels .....	10
5.2.2.2 Anthropogenic Background Levels .....	10
5.3 Asbestos Results.....	10
5.4 Quality Control Sample Results.....	10
6.0 SUMMARY .....	11
7.0 CONCLUSION.....	11
8.0 REFERENCES .....	12

### FIGURES:

- Figure 1 Site Location Map  
Figure 2 Site Layout Map  
Figure 3 Soil Sample Location Map

### TABLES:

- Table 1 Surface Soil Sample Log  
Table 2 Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>, RML THQ=3.0 Comparisons  
Table 3 Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>, RML THQ=1.0 Comparisons  
Table 4  
Table 5 Soil Samples – Asbestos Results

### ATTACHMENTS:

- Attachment 1 Chain of Custody/Traffic Reports – February 19, 2020 Sampling Event  
Attachment 2 Data Validation Report – Total Metals and Mercury – CLP Case No. 48747  
Attachment 3 Final Data Report – Hexavalent Chromium – DAS Case No. R35756  
Attachment 4 Data Validation Report – Asbestos – DAS Case No. R35754  
Attachment 5 Photographic Documentation

## 1.0 INTRODUCTION

TechLaw was tasked by the U.S. Environmental Protection Agency (EPA) Region III On-Scene Coordinator (OSC) to conduct a Removal Assessment at the Weirton BOP Implosion site (Site) located in Weirton, Hancock County, West Virginia. On-site investigation activities were conducted during November 2019 and February 2020. These activities included an initial Site reconnaissance followed by surface soil sampling conducted in accordance with the approved Sampling QA/QC Work Plan (SQAP) dated January 23, 2020 (TechLaw, 2020). This report provides a summary of the Site reconnaissance and sampling investigation activities and associated laboratory analytical results. The sampling activities were conducted by TechLaw under EPA Superfund Technical Assessment and Response Team (START) – West contract EP-S3-15-03, Technical Direction Document (TDD) No. T501-19-11-001.

## 2.0 SITE DESCRIPTION

The Site comprises the residential and commercial properties to the north, east and south of the former Basic Oxygen Plant (BOP) located on the Frontier, Mingo Junction Steel Works, LLC property in Weirton, WV. Prior to its implosion, the BOP was a large structure situated on a 16.4-acre parcel of land that was located approximately 1000 feet south-southeast from the intersection of WV State Route 2 (SR2) and Pennsylvania Avenue (SR105) in Weirton, WV. The BOP location is bound to the north by Terrace Circle, to the east by residential homes along Weir Avenue, to the south by the Steel Works facility, and to the west by SR2. Coordinates for the approximate center of the BOP facility are 40.414848 degrees (°) north latitude and - 80.587102° west longitude (Google Earth Pro® - refer to Figure 1, Site Location Map and Figure 2, Site Aerial Map).

On March 9, 2019, the final phase of the BOP demolition project was conducted by the owner who had the remaining structure demolished by means of a scheduled implosion. The implosion caused a large dust cloud and resulted in deposition of particulate matter on nearby residential and commercial properties to the east. Evaluation of surface soil on these off-site properties was the primary objective of this investigation. The BOP location and the approximate investigation area are depicted in Figure 2, Site Aerial Map. The area evaluated consists primarily of residential properties and some mixed-use commercial properties located adjacent to and north and east of the BOP, and which is along and in the vicinity of Weir Avenue and Pennsylvania Avenue. Several background samples were collected to the northwest, southwest and south of the BOP to establish attribution of contaminants where the potential for multiple contaminant contributors may exist.

The former BOP facility is located on a broad, relatively flat valley floor that was a former channel of the Ohio River. The investigation area is upslope from the BOP facility and approximately 25-100 feet higher elevation. The elevation of the valley floor is approximately 730 feet above mean sea level (amsl). The upland areas bounding the east and west sides of the valley are approximately 1170 feet amsl. Steeply sloped stream-dissected hillsides are present throughout the area and are indicative of the topography of the Allegheny Plateau zone of the Appalachian Plateau region.

### 3.0 BACKGROUND

The basic oxygen steel making process is a method of primary steel-making where carbon-rich pig iron is made into steel. The process of blowing oxygen through the pig iron lowers the carbon content within the iron and changes it to low-carbon steel. The process is known as basic, from the fluxes of burnt lime or dolomite chemical bases, which are added to aid with the removal of impurities and protect the converter lining.

Refer to the *Preliminary Investigation Report Corrective Action Area VI Iron-Making And Corrective Action Area VII Steel-Making*, (Preliminary Investigation Report) prepared by Civil and Environmental Consultants, Inc. (CEC, 2015) for a presentation of historical Site ownership and previous investigations of the Site. The CEC report figures referencing locations of solid waste management units (SWMUs) and areas of concern (AOCs) were unavailable during the background file review. SWMUs described in the Preliminary Investigation Report include the former yard office locomotive fueling station (W-700), detinning plant (W-1000, 1002, and 1007), sludge transfer station (W-1000), and air compressor condensate drip at detinning plant (W-1007).

Weirton Steel Corporation (WSC) received an initial administrative order, on September 16, 1996, under section 3008(h) of the Resource Conservation and Recovery Act (RCRA) from EPA to perform RCRA corrective actions at WSC's steel manufacturing facility located in Weirton, WV. The order became final on October 16, 1996 and specified that WSC perform a RCRA Facility Investigation (RFI). Following several revised submissions, WSC submitted a facility-wide RFI Work Plan to EPA that was approved on July 20, 1999. The RFI Work Plan divided the large complex site (1,390 acres) into 12 Corrective Action Areas (CAAs) to implement the RFI and corrective actions. The BOP building is located in CAA VII as indicated in the CEC Preliminary Investigation Report.

The Weirton BOP was operated by WSC prior to May 17, 2004 when International Steel Group, Inc. (ISG) purchased the majority of WSC's assets including the parcels that made up CAA VI (Iron-Making Area) and VII (Steel-Making Area) which included the BOP. Operations began at the facility on May 18, 2004 under the name of ISG Weirton, Inc., as a subsidiary of ISG. In April 2005, Mittal Steel N.V. (Mittal) acquired ISG. In 2006, Mittal merged with Arcelor to form ArcelorMittal, Inc. From 2006 to 2012, the facility was operated by ArcelorMittal Weirton, Inc., a subsidiary of ArcelorMittal USA, Inc. On December 31, 2012, ArcelorMittal Weirton, Inc. converted to a limited liability company and the name was changed to ArcelorMittal Weirton LLC (CEC 2015).

The RFI Work Plan for CAAs VI and VII was submitted to the U.S. EPA on June 26, 2013. A revised work plan was approved by EPA on September 19, 2013. CEC conducted field investigations from October to December 2013. A total of 17 soil borings (SBs) were installed in CAAs VI and VII. One SB was installed in CAA VI. Sixteen SBs were installed in CAA VII. A total of 9 groundwater monitoring wells (GMWs) were installed in CAAs VI and VII. These included three GMWs that were installed in CAA VI and six GMWs that were installed in CAA VII.

CEC indicated that the constituents of potential concern (COPCs), related to the (SWMUs and AOCs identified in the Preliminary Investigation Report, include volatile organic compounds (VOCs), primarily monocyclic aromatic hydrocarbons and halogenated aliphatics; semi-volatile

organic compounds (SVOCs), primarily phenols and polynuclear aromatic hydrocarbons (PAHs); polychlorinated biphenyl (PCBs); metals; and cyanide (CEC 2015). Results from the preliminary investigation were compared with the residential and industrial EPA Regional Screening Levels (RSLs) for soil that were current at the time of the CEC report (January 2015). Surface soil was compared to the RSL for residential soil based on a future redevelopment scenario. Subsurface soil was compared to the RSL for industrial soil.

Surface soil samples collected as part of the CEC Preliminary Site Investigation conducted in 2015 were analyzed for select VOCs and SVOCs, including 17 (PAHs) and Target Analyte List (TAL) Metals plus cyanide, and PCBs. Analytical results indicated there were no VOCs detected in surface soil samples that exceeded the residential RSLs for soils.

The CEC Preliminary Investigation Report indicates at least seven surface soil sample locations are associated with the BOP building area. The sample identifiers (IDs) are VII-SS-11, 12, 13, 18, 19, 20 and 21. These sample locations are described in Table 5-1 of the CEC Preliminary Investigation Report. The COCs identified in the report as exceeding the RSL for residential soil (surface soil) include PAHs and metals as follows:

- Benzo(a)anthracene with analytical results ranging from 0.013 milligrams per kilogram (mg/kg) to 0.17 mg/kg. Two of the seven samples exceeded the residential soil RSL of 0.15 mg/kg;
- Benzo(a)pyrene with analytical results ranging from 0.0082 mg/kg to 0.18 mg/kg. Six of the seven samples exceeded the residential soil RSL of 0.015 mg/kg;
- Benzo(b)fluoranthene with analytical results ranging from 0.013 mg/kg to 0.2 mg/kg. Two of the seven samples exceeded the residential soil RSL of 0.15 mg/kg;
- Dibenz(a,h)anthracene with analytical results ranging from 0.0081 mg/kg to 0.052 mg/kg. Three of the seven samples exceeded the residential soil RSL of 0.015 mg/kg;
- Arsenic with analytical results from 0.75 mg/kg to 5.6 mg/kg. Six samples (SVII-SS-18 was not sampled for TAL metals) exceeded the residential soil RSL of 0.67. Four of the six samples exceeded the industrial soil RSL of 3 mg/kg.

A detailed description of RCRA sampling activities and analytical results can be found in the CEC Preliminary Investigation Report.

More recent activity showed that the BOP parcel was sold to Frontier Industrial Corporation in January 2017. During 2017-2018, an asbestos survey and removal was conducted at the BOP. On June 9, 2018, BOP demolition and teardown began. On March 9, 2019, remaining Sections 14, 15, and 16 of the BOP were demolished via implosion. The implosion caused a large dust cloud that resulted in deposition of particulate matter on nearby residential and commercial properties predominantly to the east of the BOP. On March 11, 2019, a sample of the dust material deposited from the implosion was collected by a chemist and analyzed at a commercial laboratory for inductively coupled plasma-atomic emission spectrometry (ICP-AES) metals, mercury and hexavalent chromium. The results indicated the presence of arsenic, cadmium, lead, and mercury within the dust sample at concentrations of potential concern (Sellitti, 2019). On July 10, 2019, a lawsuit was filed in Hancock County WV Court representing residents of 23 households in Weirton due to alleged hazards and property damage resulting from the implosion.

The West Virginia Department of Environmental Protection (WVDEP) subsequently requested EPA assistance with evaluating surface soils on nearby properties for contaminants of concern related to the implosion.

#### **4.0 INVESTIGATION ACTIVITIES**

TechLaw performed the following activities as part of this investigation: prepared a Health and Safety Plan (HASP); conducted a site reconnaissance; developed a geographical information system (GIS) database for the Site; acquired parcel maps; prepared the SQAP; arranged for analytical services; developed a SCRIBE™ database for the Site; conducted a sampling event that included collection of surface soil samples; shipped samples to assigned and/or procured laboratories; managed environmental data; evaluated sample results; and prepared this report.

The following paragraphs summarize the investigation and sampling activities conducted at the Site and provide a brief synopsis of the analytical results. Site and sample location maps, a sample log, data summary tables, chain-of-custody's (COCs), data validation reports and a photolog are attached at the end of this report.

##### **4.1 Site Reconnaissance**

On the morning of November 26, 2019, two EPA On-Scene Coordinators and three START personnel held a meeting at the TechLaw office in Wheeling, WV to discuss the project scope, objectives and schedule. Following the meeting, all personnel mobilized to the Site and conducted a Site reconnaissance to evaluate potential sampling locations in the area of interest near the BOP implosion site. The reconnaissance activities included reviewing property parcels identified by EPA based on their proximity to the implosion site and accessibility. The parcels evaluated were owned by the City of Weirton and included open vacant lots, wooded lots, playgrounds, a small park, and a parcel containing a fenced pump house station. Most of these locations were within the residential neighborhood along Weir Avenue east of the BOP that received significant deposition of particulates from the BOP implosion that took place 8.5 months earlier. Video footage of the implosion taken by media outlets and others was readily available on the internet for viewing and showed the large dust cloud envelope the neighborhood on Weir Avenue including the lots identified for potential sampling activities. START took photos and obtained global positioning system (GPS) coordinates at the property locations to support preparation of the SQAP then demobilized from the Site.

##### **4.2 Planning and Pre-Mobilization Activities**

During interim planning and SQAP development activities that took place during December 2019 and January 2020, EPA identified 13 additional privately owned lots that were within the Weir Avenue investigation area for sampling purposes. TechLaw provided to the OSC parcel ownership information and parcel maps obtained from the Hancock County Assessor's Office on-line service. This was to assist EPA's efforts with obtaining owner access agreements to conduct the sampling activities. The additionally identified privately owned vacant lots were located in areas directly across from, due east of, and downwind of the BOP implosion location.

A property access agreement for the 13 privately owned parcels was signed by the owner on January 20, 2020. The access agreement for 11 properties owned by the city of Weirton was signed on January 21, 2020.

TechLaw START prepared a Draft SQAP to outline sampling procedures for collecting surface soil samples (TechLaw, 2020). The SQAP specified analytical parameters and project quality control/quality assurance (QA) procedures to be used during the sampling event. TechLaw prepared a draft Analytical Request Form (ARF) and submitted it along with the SQAP to the OSC for review and approval on January 9, 2020. The SQAP was revised to address EPA comments received on January 23, 2020 and TechLaw submitted the final SQAP on the same date to the OSC. The approved SQAP and ARF were submitted to the EPA Region III Office of Analytical Services and Quality Assurance (OASQA) Client Services Team (CST) on January 24, 2020 to arrange for analytical services. The CST scheduled analytical services for the project through the Contract Laboratory Program (CLP) Routine Analytical Services (RAS) and Delivery of Analytical Services (DAS), and requested Tier IV laboratory services be procured by TechLaw for Asbestos analysis. Case numbers and laboratory assignments were provided by the CST to TechLaw on February 5, 2020. TechLaw prepared a scope-of-work (SOW) and request for quote (RFQ) and solicited bids from laboratories capable of performing the asbestos analysis. EMSL Analytical, Inc., Cinnaminson, NJ was subcontracted by TechLaw to conduct the work. The following case numbers, analytical parameters and laboratory assignments were provided to TechLaw by the EPA CST:

1. **CLP Case No. 48747:** For analyses of surface soil samples and a rinsate blank for TAL metals (total) and mercury (Hg). The analyses were assigned by the CST to Bonner Analytical Testing Company, Hattiesburg, MS.
2. **DAS Case No. R35756:** For analysis of surface soil samples and a rinsate blank for hexavalent chromium. The analysis was assigned by the CST to the EPA Region 3 OASQA Laboratory, Fort Meade, MD.
3. **DAS Case No. R35754 (Tier IV):** For analyses of surface soil samples for asbestos containing materials (ACMs). TechLaw procured analytical services for asbestos with EMSL Analytical, Inc. – Cinnaminson, NJ Laboratory.

On January 31, 2020, the OSC provided TechLaw with the signed access agreements for properties to be sampled. TechLaw updated sample location parcel maps to include the properties where access was granted. The SCRIBE™ database was prepared to output sample tags, labels, and Chain-of-Custody (COC) records; and to use for data management. TechLaw procured sampling materials and supplies and rented a Trimble® Geo 7X handheld GPS unit to collect coordinates at the sample locations.

During the week of February 17, 2020 and prior to the sampling event, EPA handed out postcards to citizens in the area of the investigation that provided information related to EPA's activities being conducted at the Site and pertinent EPA contact information.

#### **4.3 Field Sampling Activities**

On February 19, 2020, prior to mobilization to the Site, TechLaw collected a rinsate blank (RB-01) from the dedicated trowels to be used during the sampling event. The blank sample was collected by pouring deionized ultra-filtered water (DIUF) over the trowels to be used for sampling and collecting the water in sample containers and storing the sample in a cooler on ice. After collection of the rinsate blank, TechLaw START mobilized three personnel to the Site to conduct sampling activities. EPA OSC's Deborah Lindsey and Samantha Holtzinger were

present for the duration of the sampling event.

TechLaw collected a total of 19 biased, discrete (grab) surface soil samples including two duplicate samples from 17 locations on the Site. The sampling locations were on eight City-owned properties and nine privately-owned properties for which access had been granted by the property owners. Three of the locations on City-owned property were selected as background locations (SS-17, SS-18, SS-19). Soil samples were identified as SS-01 through SS-19 and were numbered in the chronological sequence that they were collected. The sample locations are depicted on Figure 3, Sample Location Map.

All surface soil samples were collected from 0-3 inches depth using dedicated stainless steel trowels and in accordance with the procedures outlined in the SQAP. Soil samples were placed in dedicated aluminum pans and thoroughly homogenized. Stones, vegetation and debris were removed prior to filling certified-clean sample containers. Each sample location was photographed and described in the Site logbook. General physical descriptions of the soil were documented. Sample coordinates were collected with the Trimble® GPS data collector. Sample containers were marked with the sample identifier, placed in a plastic zipping bag and stored in a cooler on ice until the samples were processed for shipping. Weather during the event was partly cloudy with temperatures ranging from 26° Fahrenheit (F) in the morning to 39° F in the afternoon. Winds were out of the northwest at 5-10 mph.

Areas of particulate deposition attributed to the BOP implosion dust cloud were not directly observed by the sampling team either on the ground surface at the sampling locations, or on the parcels in general. The lack of observed particulate deposition was likely attributable to weathering over the 8.5 months period between the implosion date and sampling date. Wind, precipitation, infiltration and runoff would be factors contributing to the lack of observed surficial deposition of particulate fallout. The sampling team did observe particulate staining/dust on at least one home structure during the sampling event that could possibly be attributable to the implosion event. Refer to Table 1, Soil Sample Descriptions for sample information including sample locations, location descriptions, sample IDs, CLP sample numbers, sample depths, and general descriptions of the soil.

The sampling team completed sampling activities on February 19, 2020 and all personnel demobilized from the Site. TechLaw returned to their Wheeling, WV office and updated the SCRIBE™ database. Samples were labeled, tagged, packaged and shipped under chain-of-custody to the respective laboratories specified in Section 4.2. The samples were packaged and shipped on ice with the exception of the samples scheduled for asbestos analysis. All samples were shipped on February 20, 2020 to the laboratories via FedEx priority overnight. One cooler containing the samples for metals and mercury analyses was delayed by the courier and arrived at the laboratory on February 24, 2020. TechLaw did not receive notification from the courier that the shipment would be delayed. Regional copies of the chain of custody/traffic reports (COC/TR) for all samples shipped are presented in Attachment 1. Refer to Table 1, Sample Log (attached) which tabulates sample location and description information.

## 5.0 ANALYTICAL RESULTS

Analytical services for TAL total metals by analytical method ISM02.4 ICP-AES and for mercury by method ISM02.4 were provided by Bonner Analytical Testing Company under EPA

CLP RAS Case number 48747. Analytical services for hexavalent chromium by solid waste analytical method SW3060A/7199A were provided by OASQA under EPA DAS Case number R35756. Analytical services for polarized light microscopy asbestos analysis by analytical method EPA/600/R-93/116 were provided by EMSL Analytical, Inc. under Tier IV DAS Case number R35754.

## 5.1 Data Validation

Independent third party data validation of the analytical data provided through the CLP and the Tier IV laboratories was completed by the EPA Environmental Services Assistance Team (ESAT) contractor. Inorganic data were validated according to the EPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017) and applicable EPA Region III modifications. Electronic validation was performed by the Electronic Data eXchange & Evaluation System (EXES). The inorganics validation report has been assigned the Superfund Data Validation Level Stage 3 Validation Electronic Manual (S3VEM). Analytical data for samples analyzed by the EPA OASQA were reviewed and validated in accordance with internal QA/QC requirements.

The Final Report containing validated hexavalent chromium results was received from OASQA on April 15, 2020. The data validation report for metals and mercury was received from ESAT on May 5, 2020. The data validation report for asbestos was received on June 2, 2020. Refer to Attachments 2, 3 and 4 – Data Validation Reports for findings documented during the data validation process.

The data validators sometimes assign qualifiers to data based on a review of the data and quality control parameters. Lists of potential data qualifiers typically used and definitions are provided below.

### Glossary of Inorganic Data Qualifier Codes

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.

## 5.2 TAL Metals, Mercury and Hexavalent Chromium Results

### 5.2.1 Comparison To EPA's Removal Management Levels

The inorganic analytical results for surface soil samples were compared to EPA Regional Removal Management Levels (RMLs) for Industrial and Residential soil (Target Hazard Quotient [THQ]=3.0) (EPA, 2019b) and EPA RMLs for Industrial and Residential soil (THQ=1.0) (EPA, 2019b). The RMLs discussed in this report and provided in the attached tables are generic in that they are calculated without using site-specific information. The RMLs assist with identifying areas, contaminants and conditions where a removal action under CERCLA may be appropriate. Other factors such as background concentrations, site-specific exposure scenarios, or other program considerations are also considered when evaluating the appropriateness for conducting removal actions. RMLs are not meant to define protective levels and are not de facto cleanup levels. The generic RMLs correspond to risk levels of approximately 10<sup>-4</sup> and/or a Hazard Quotient of up to 3 for long-term exposure to individual chemicals at a site. The generic RML tables provide risk-based values corresponding to an HQ of 1 and 3 for those chemicals with potential non-carcinogenic toxicity as there may be site-specific and/or chemical specific circumstances where an HQ less than 3 may be more appropriate for calculating RMLs. For example, RMLs corresponding to an HQ of 1 may be more appropriate for those sites where multiple chemicals are present that have reference doses (RfDs) or reference concentrations (RfCs) based on the same toxic endpoint or where the toxicity of a chemical is such that exceeding the RfD/RfC, even slightly, warrants particular concern (EPA, 2019b).

Analytical results that exceeded the screening benchmarks are presented in the subsections below. Refer to Table 1, Sample Log and the attached Photo Log for sample locations and descriptions.

#### 5.2.1.1 RML THQ=3 Exceedances

There were two samples that exceeded the RML THQ=3 screening levels for metals in residential soil. Sample SS-05 exceeded the benchmark for lead and sample SS-18 exceeded the benchmark for manganese as further described below.

Lead was detected at a concentration of 485 mg/kg in sample SS-05. The concentration exceeded the residential soil RML benchmark of 400 mg/kg. There were no other samples that exceeded screening level benchmarks for lead.

Manganese was detected at a concentration of 5,510 mg/kg in sample SS-18. The concentration slightly exceeded the residential soil RML THQ=3.0 benchmark concentration of 5,500 mg/kg. Sample SS-18 was a background sample collected from a location approximately 0.75 miles south of the former BOP.

There were no other sample results for metals that exceeded RML THQ=3 benchmarks. Refer to Table 2 for a comparison of the metals data to the RML THQ=3 screening level benchmarks. In the tables, benchmark exceedances are identified by color shading. The color key located in the upper left corner on each table describes the type of benchmark exceedance.

#### 5.2.1.2 RML THQ=1.0 Exceedances

There were eight samples that exceeded the RML THQ=1.0 screening level benchmarks for metals in residential soil. The samples included SS-03, SS-04, SS-05, SS-09, SS-11, SS-17, SS-18 and SS-19 which contained elevated concentrations of arsenic, iron and/or manganese. These samples and the exceedances are further described below.

Only one sample, SS-19, exceeded the RML for arsenic. Arsenic was detected in SS-19 at a concentration of 43.9 mg/kg which exceeded the RML of 35 mg/kg for arsenic in residential soil. SS-19 was collected from a background location approximately 1,800 feet southwest of the former BOP.

Iron was detected in four samples at concentrations that exceeded the residential soil RML benchmark (THQ=1.0) of 55,000 mg/kg. The samples that exceeded the RML included duplicate samples SS-03 (62,700 mg/kg)/SS-04 (64,700 mg/kg) and background samples SS-17 (63,500 mg/kg), and SS-19 (58,500 mg/kg).

Lead was detected at a concentration of 485 mg/kg in sample SS-05 which exceeded the RML of 400 mg/kg.

Manganese was detected at concentrations exceeding the residential soil RML benchmark (THQ=1.0) of 1,800 mg/kg in seven samples. These included duplicate samples SS-03 (4,670 mg/kg)/SS-04 (4,000 mg/kg), SS-09 (2,120 mg/kg), SS-11 (2,340 mg/kg) and background samples SS-17 (1,990 mg/kg), SS-18 (5,510 mg/kg) and SS-19 (1,870 mg/kg).

There were no other metals results that exceeded RML THQ=1.0 benchmarks for residential soil or industrial soil scenarios. Refer to Table 3 for a comparison of the metals results to the RML THQ=1.0 screening level benchmarks.

#### 5.2.2 Comparison to Background Levels

Factors such as background levels, may also be considered in evaluating sample data and the need for further action. Background concentrations can be evaluated as natural background levels or as anthropogenic background levels. Natural background levels refer to elements and compounds that occur naturally in the earth without any human interference. Anthropogenic background levels refer to concentrations of elements and compounds that occur over an area as a result of human activities. The most common example of a naturally occurring background condition is metals in soils. Nearly all soils contain a variety of metal constituents, such as iron, aluminum and lead. These constituents are present in the rocks from which the soils are ultimately derived, and the concentrations can be quite variable and dependent on the specific geologic environment.

In order to compare the analytical data collected as part of this assessment to natural background levels, EPA will use natural background levels that are consistent with Section 3.8.2 of West Virginia's Voluntary Remediation Program Guidance Manual and presented in Table 4. The analytical data from the area in the vicinity of Weir Avenue will also be compared to the three background samples to assess if there are any anthropogenic background levels.

#### 5.2.2.1 Natural Background Levels

All of the soil samples were analyzed for TAL metals which consisted of 23 metals. The laboratory analysis reported no detectable levels of antimony, selenium, silver, sodium, thallium and hexavalent chromium in all sample locations except for SS-01.

A simple comparison of the published natural background levels for West Virginia to the data collected as part of this assessment showed that samples collected did not exceed the natural background levels for aluminum, barium, beryllium, cobalt and potassium.

Thirteen metals including arsenic, cadmium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, vanadium and zinc exceeded the published natural background levels. A number of these metals can be associated with the historical industrial operations for the area which may be detected in anthropogenic background levels.

Of the thirteen metals exceeding natural background levels, arsenic, iron, lead and manganese exceeded the RML screening benchmarks.

#### 5.2.2.2 Anthropogenic Background Levels

Three soil samples were selected outside of the implosion plume and collected as site-specific background samples. The locations of the site-specific background samples were non-industrial areas. An average value of the three samples was used in the comparison of Site samples compared to the site-specific background samples.

There were no detectable levels of antimony, selenium, silver, sodium, thallium and hexavalent chromium in the three background locations.

For eleven of the metals, results of the samples collected in the Weir Avenue location were similar to the site-specific background locations including aluminum, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, potassium and vanadium.

Arsenic, barium, beryllium, calcium, iron and magnesium were lower in the Weir Avenue samples compared to the average value for the site-specific background locations

Zinc was higher in the Weir Avenue samples as compared to the site-specific background locations.

### 5.3 Asbestos Results

The EPA and OSHA consider a material to be asbestos-containing if at least one sample from the homogenous area shows asbestos in an amount greater than 1%. The asbestos results were compared to the 1% concentration standard.

There were no soil samples that contained asbestos fibers at concentrations greater than 1%. Asbestos results for all samples except one were non-detect. In the one sample where asbestos was identified, chrysotile asbestos was observed in sample SS-12 at a trace concentration of <0.25%. Refer to Table 5 for a summary of asbestos results.

### 5.4 Quality Control Sample Results

As described in Section 4.3, TechLaw collected one rinsate blank (RB-01) from stainless steel

trowels that were decontaminated prior to mobilization and used to collect soil samples during the sampling event. The sample was analyzed for total metals, mercury and hexavalent chromium. All parameters were non-detect and no data were qualified based on the laboratory results. RB-01 laboratory results may be found in the data validation report in Attachment 2.

## 6.0 SUMMARY

A total of 19 soil samples including two duplicate samples were collected from 17 locations at the Site. The sampling locations included 14 parcels located in the residential and commercial properties near the March 9, 2019 BOP implosion site, plus three additional background locations that were located north, south and southwest of the implosion area. The soil samples were analyzed for TAL Metals, mercury, hexavalent chromium and asbestos content.

Analytical results for the TAL metals, mercury, and hexavalent chromium indicated that lead and manganese exceeded the residential soil RML THQ=3 benchmark. This occurred in samples SS-05 where the lead concentration was 485 mg/kg, and in SS-18 where the manganese concentration was 5,510 mg/kg. Sample SS-05 was collected from a vacant residential lot without structures where residential construction/demolition debris was observed in the surface soil cover. Sample SS-18 was collected from a background location near the perimeter fence line of a community events center.

Arsenic, iron and manganese concentrations in surface soil samples exceeded the RML THQ=1 benchmark for residential soil in eight samples. The RML for arsenic (35 mg/kg) was exceeded in one sample, SS-19, that had a concentration of 43.9 mg/kg. SS-19 was collected from a background location approximately 1,800 feet southwest of the former BOP. Iron was detected in four samples at concentrations exceeding the residential soil RML (THQ=1.0). The samples included SS-03 (62,700 mg/kg)/SS-04 (64,700 mg/kg), SS-17 (63,500 mg/kg), and SS-19 (58,500 mg/kg). Manganese was detected at concentrations exceeding the residential soil RML (THQ=1.0) in seven samples. These included duplicate sample set SS-03 (4,670 mg/kg)/SS-04 (4,000 mg/kg), SS-09 (2,120 mg/kg), SS-11 (2,340 mg/kg), SS-17 (1,990 mg/kg), SS-18 (5,510 mg/kg) and SS-19 (1,870 mg/kg).

Asbestos results were non-detect in all samples except SS-12 which contained a trace level of chrysotile (<0.25%) which is less than the 1% EPA standard for identifying ACM.

A review of the site data compared to background levels was to provide a cursory review to see if levels at the Site could be attributable to naturally occurring metals or anthropogenic conditions. The cursory review showed that concentrations within the Site along Weir Avenue exceed published West Virginia background levels for a number of the metals that are consistent with industrial operations that have been conducted in the area. Comparison of the site data to the site-specific background locations support that the area has metal concentrations which appear to be associated with widespread anthropogenic conditions. A complete background study would need to be conducted to support further conclusions regarding unknown or unconfirmed sources.

## 7.0 CONCLUSION

EPA was asked by the WVDEP to perform a removal site evaluation on a residential neighborhood adjacent to the Weirton BOP facility to determine if contaminants are present as a

result of the implosion of the BOP structure which took place in March of 2019. EPA's review of the analytical data collected in February 2020 showed concentrations of metals in all of the samples. A small number of samples had levels that exceeded EPA's removal screening benchmarks for soils. Three sample locations exceeded EPA's removal screening levels for iron and manganese, one sample location exceeded for lead and one sample location contained a trace level of asbestos. The background samples outside of the implosion plume contained levels of iron, manganese and arsenic that exceeded removal screening benchmarks. EPA's review of the data showed levels consistent with backgrounds level, both natural occurring and historical, and that a removal action is not warranted.

EPA has coordinated a review of the data with the WVDEP. WVDEP responded that EPA's removal evaluation was satisfactory in the number of samples collected, sample locations provided a broad area to assess potential impact and addressed their request for a more thorough assessment. WVDEP's review of the data did not identify significant exceedances as it related to the WVDEP's RCRA program and would not be pursuing any cleanup of the soils.

EPA has also requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review the data and provide a Public Health Evaluation for the Site. EPA will review any recommendations made by the ATSDR and evaluate if any additional actions can be conducted.

## 8.0 REFERENCES

- CEC, 2015. Civil and Environmental Consultants, Inc. *Preliminary Investigation Report Corrective Action Area VI Iron-Making And Corrective Action Area VII Steel-Making*. 4000 Triangle Lane, Suite 200 Export, PA 15632, May 2015.
- EPA, 2019b. *Regional Removal Management Levels for Resident Soil and Industrial Soil* THQ=1.0 and THQ=3.0 November 2019: <https://www.epa.gov/risk/regional-removal-management-levels-chemicals-rmls>
- Sellitti, 2019. *Weirton BOP Demolition*. Letter and laboratory results. Sellitti, Nogay, & McCune, P.L.L.C. Attorneys at Law to West Virginia Department of Environmental Protection, Division of Air Quality. Weirton, WV. April 18, 2019.
- TechLaw, 2020. *Sampling QA/QC Work Plan, Removal Assessment, Weirton BOP Implosion Site, Weirton, Hancock County, West Virginia*. TechLaw, Wheeling, WV. January 23, 2020.
- WVDEP, 2019. *West Virginia Voluntary Remediation Program Guidance Manual*. West Virginia Department of Environmental Protection. 601 57<sup>th</sup> Street SE, Charleston, WV. September 2019.

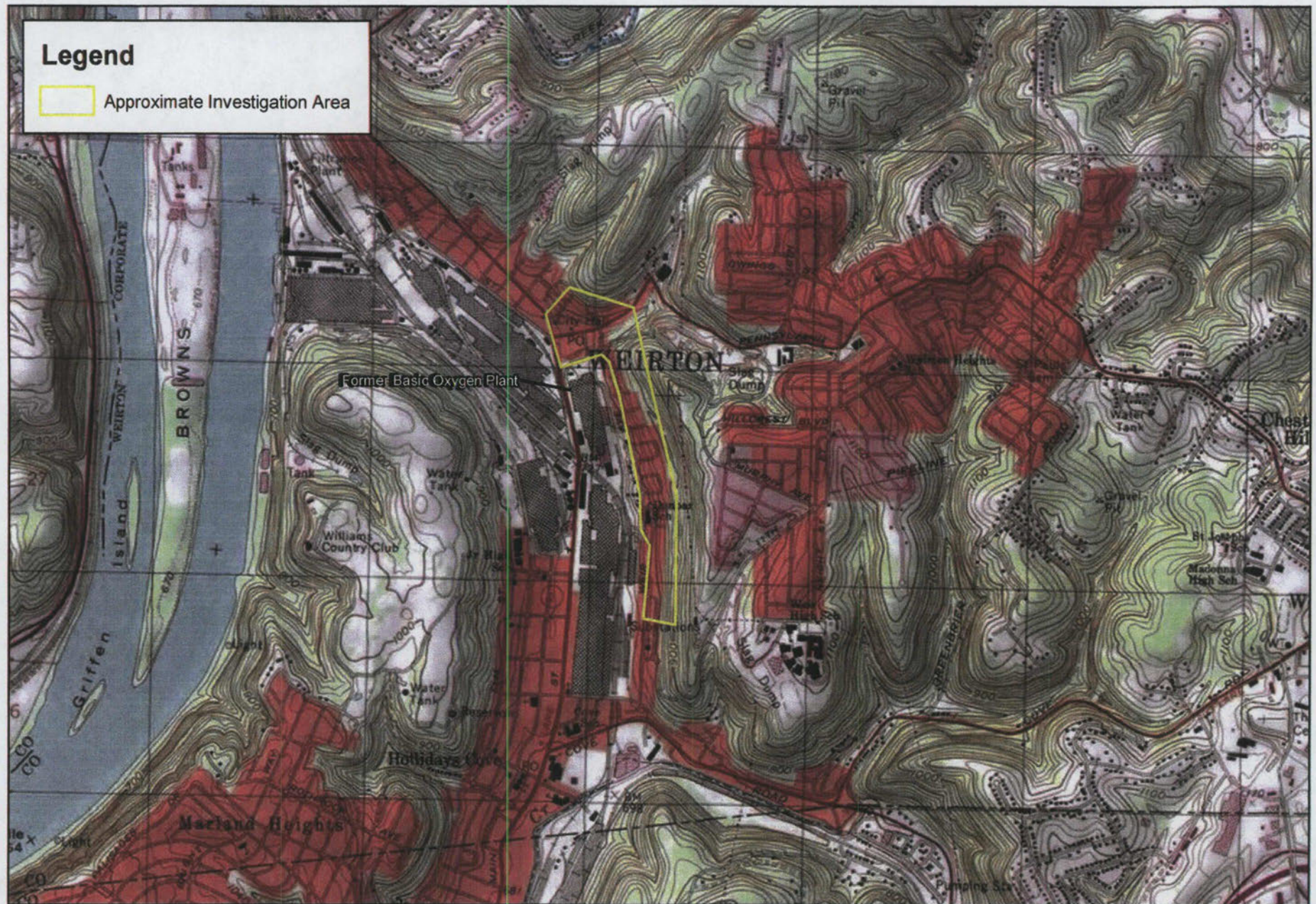
TechLaw, Inc.  
START 5 Region III  
EP-S3-15-03

Weirton BOP Implosion Site  
Removal Assessment Trip Report  
Revision: Final  
June 30, 2020

## FIGURES

 Approximate Investigation Area

### Approximate Investigation Area




**Figure 1: Site Location Map  
Weirton BOP Implosion Site  
Weirton, West Virginia**



0 700 1,400 2,800 Feet

NAD 1983 - State Plane West Virginia North (ft)

## Legend

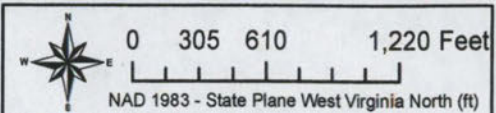
 Approximate Investigation Area

Former Basic Oxygen Plant

 **TechLaw**  
Contract No. EP-S3-15-03  
TDD: T501-19-11-001



Figure 2: Site Aerial Map  
Weirton BOP Implosion Site  
Weirton, West Virginia



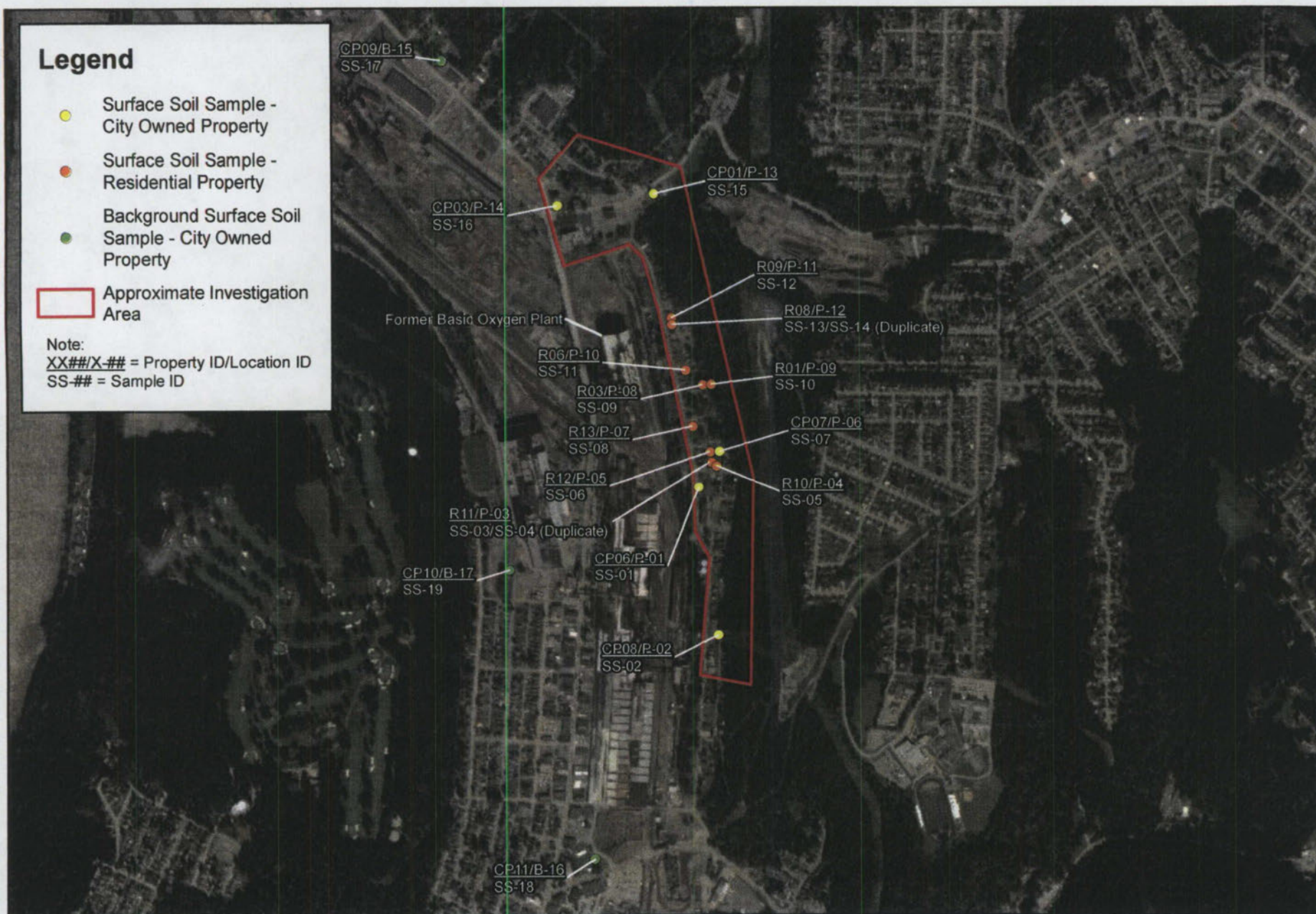
## Legend

- Surface Soil Sample - City Owned Property
- Surface Soil Sample - Residential Property
- Background Surface Soil Sample - City Owned Property

□ Approximate Investigation Area

Note:

XX##/X-## = Property ID/Location ID  
SS-## = Sample ID



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TDD: T501-19-11-001



Figure 3: Sample Location Map  
Weirton BOP Implosion Site  
Weirton, West Virginia



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EP-S3-15-03

Weirton BOP Implosion Site  
Removal Assessment Trip Report  
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## TABLES

Table 1 - Surface Soil Sample Log  
Weirton BOP Implosion Site  
February 19, 2020

Sample ID	CLP/DAS Sample IDs	Sample Loc ID	Property ID	Location Description	Sub-Location Description	Sample Depth (in)	Comments
SS-01	MC0AB2 R35754-01 R35756-01	P-01	CP06	Playground with small pavilion tucked into the northwest corner, grass cover	South side of pavillion in roof drip line	0-3	Soils: light to medium brown, low plasticity, loamy-silty, moist
SS-02	MC0AB3 R35754-02 R35756-02	P-02	CP08	Fenced in pump house situated on a west sloping hill, sparse grass cover	Along fence line, west and downgradient of gutter spout	0-3	Soils: medium to dark brown, silt loam, some moisture, low plasticity, sun angular gravels and pebbles, poorly sorted present.
SS-03	MC0AB4 R35754-03 R35756-03	P-03	R11	Vacant residential lot, no structures, grass cover	13 feet east of May St. in line with N. wall of brown house other side of May St. 70 feet north of Kessel St	0-3	Soils: black silt, gravels, clay tile fragments,
SS-04 (Duplicate of SS-03)	MC0AB5 R35754-04 R35756-04						
SS-05	MC0AB6 R35754-05 R35756-05	P-04	R10	Vacant residential lot, no structures, grass cover	50 feet east of May St. edge, 50' north of Kessel St, 5-7 feet higher elevation than SS-03	0-3	Soils: Dark gravelly silt loam, loose, moist; construction/demolition debris, tile frag
SS-06	MC0AB7 R35754-06 R35756-06	P-05	R12	Vacant residential lot, no structures, grass cover	Est. 10 feet east of May St, below basketball court in line with N porch line of beige house above BB court	0-3	Soils: Dark gravelly silt loam, loose, moist
SS-07	MC0AB8 R35754-07 R35756-07	P-06	CP07	Fenced in community basketball court, thick grass cover	8 inches east of east-side fence line of basketball court, 3.5 fence poles N of NE corner of court along fence line	0-3	Soils: medium brown loam, moist
SS-08	MC0AB9 R35754-08 R35756-08	P-07	R13	Vacant residential lot, no structures, grass cover	45' south of Mendel St. sidewalk edge, 6 feet west of east edge of exposed foundation	0-3	Soils: medium brown, silt loam, low plasticity
SS-09	MC0AC0 R35754-09 R35756-09	P-08	R03	Vacant residential lot, no structures, vegetation and undergrowth present	Deer trail, 73' from eastern edge of May St, 30' from edge of Loeb St	0-3	Soils: organic, black loam
SS-10	MC0AC1 R35754-10 R35756-10	P-09	R01	Vacant residential lot, no structures, vegetation and undergrowth present	171 feet east of May St; est 20 feet north of Loeb St.	0-3	Soils: dark gray to black, moist, silt loam, plant matter and gravels present
SS-11	MC0AC2 R35754-11 R35756-11	P-10	R06	Vacant residential lot, former house foundation present, grass cover	Centrally located in upgradient quarter of lot.	0-3	Soils: Med brown, moist, silty loam, root material present
SS-12	MC0AC3 R35754-12 R35756-12	P-11	R09	Vacant residential lot, no structures, grass cover.	58 feet east from edge of sidewalk on Weir Ave. 80 feet from south edge of Ohio St.	0-3	Soils: organic silty loam, roots present

**Table 1 - Surface Soil Sample Log**  
**Weirton BOP Implosion Site**  
**February 19, 2020**

Sample ID	CLP/DAS Sample IDs	Sample Loc ID	Property ID	Location Description	Sub-Location Description	Sample Depth (in)	Comments
SS-13	MC0AC4 R35754-13 R35756-13	P-12	R08	Vacant residential lot, clear, no structures, grass cover.	57 feet east of sidewalk on Weir Ave at base of upper terrace. 141 feet south of Ohio St.	0-3	Soils: medium brown, moist, non plastic, silty loam, some root material present
SS-14 (Duplicate of SS-13)	MC0AC5 R35754-14 R35756-14						
SS-15	MC0AC6 R35754-15 R35756-15	P-13	CP01	Vacant lot, medium sized trees and overhead power lines present, thin grass cover	Est. 45 feet SE of Pennsylvania Ave and approx 60 feet NE of Auto Repair parking lot edge.	0-3	Soils: brown, silt loam with root material present
SS-16	MC0AC7 R35754-16 R35756-16	P-14	CP03	Public park, memorial location, grass cover	4 feet west of 4-in diameter tree in center circle of park walkway	0-3	Soils: medium to dark brown, fine silty loam, low moisture content, loose non-plastic
SS-17	MC0AC8 R35754-17 R35756-17	B-15	CP09	Training facility and fire station for the city of Weirton, sparse weed cover	NW Corner of Lot outside of fenceline in shrub-brush. East of back lot gate. Low area collects runoff from upgradient.	0-3	Soils: dark brown, silt loam, moist
SS-18	MC0AC9 R35754-18 R35756-18	B-16	CP11	Community events center for the city of Weirton, grass cover	Est. 125' SE from easternmost corner of parking lot. 1 foot east of fence line.	0-3	Soils: black organic loam, loose, small gravels, slightly moist,
SS-19	MC0AD0 R35754-19 R35756-19	B-17	CP10	Playground and basketball court, grass cover	Est. 10 feet north of north side of basketball court. Outside of fence. 15' west of NE fence corner.	0-3	Soils: brown, silty loam, some root material
<b>Key</b> CP = City Property (Property ID) R = Residential Property (Property ID) P = Property (Sample Location) B = Background (Sample Location)							

Table 2  
Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>  
RML THQ=3.0 Comparisons

Result > Benchmarks A, B		CLP Sample Number: Sample #: Sampling Location: Sub-Location Sample Type Matrix: Units: Date Sampled: Date Analyzed:		MC0AB2	MC0AB3	MC0AB4	MC0AB5	MC0AB6	MC0AB7	MC0AB8	MC0AB9		
Result > Benchmark A Only				SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08		
Result > Benchmark B Only				P-01	P-02	P-03	P-03	P-04	P-05	P-06	P-07		
				CP06	CP08	R11	R11	R10	R12	CP07	R13		
				Field Sample	Field Sample	Field Sample	Dupe of SS-03	Field Sample	Field Sample	Field Sample	Field Sample		
				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
				2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020		
		3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020				
		A	B										
		RML THQ=3.0 ResSoil mg/kg	RML THQ=3.0 IndSoil mg/kg										
Parameter	CAS No.			Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	230000	3400000	15000		16400		12900		12400		14300	
Antimony	7440-36-0	94	1400	1.3	J	7.3	U	7.2	U	6.9	U	8.4	U
Arsenic	7440-38-2	68	300	11.4		18.1		20.1		20.3		17.1	
Barium	7440-39-3	46000	650000	81.1		192		285		249		236	
Beryllium	7440-41-7	470	6900	0.65	J	1		0.8		0.83		1.2	
Cadmium	7440-43-9	210	2900	0.15	J	0.93		2.4		2.1		1.4	
Calcium	7440-70-2			4520		8040		19400		13900		11500	
Chromium	7440-47-3			59.8		41.9		218		186		54.7	
Cobalt	7440-48-4	70	1000	10.9		12.8		11.2		10.6		11.4	
Copper	7440-50-8	9400	140000	22		31.7		204		210		45.2	
Iron	7439-89-6	160000	2500000	32400		34100		62700		64700		35900	
Lead	7439-92-1	400	800	28		246		382		361		485	
Magnesium	7439-95-4			3310		4410		5060		4570		3720	
Manganese	7439-96-5	5500	77000	1200		1110		4670		4000		1460	
Nickel	7440-02-0	4600	67000	22.3		28.8		32.2		26.7		22.6	
Potassium	7440-09-7			1700		2150		1920		1820		2330	
Selenium	7782-49-2	1200	18000	4.9	U	4.3	U	4.2	U	4	U	4.9	U
Silver	7440-22-4	1200	18000	0.23	J	1.2	U	1.2	U	1.1	U	1.4	U
Sodium	7440-23-5			47.4	J	608	U	597	U	573	U	704	U
Thallium	7440-28-0	2.3	35	3.5	U	3	UJ	3	UJ	2.9	UJ	3.5	UJ
Vanadium	7440-62-2	1200	17000	40.4		36.5		96.4		87.7		38.8	
Zinc	7440-66-6	70000	1100000	194		3010		1000		927		682	
Mercury	7439-97-6	33	140	0.031	J	0.12	UJ	0.32		0.25		0.31	
Hexavalent Chromium	18540-29-9	30	630	0.61	U	0.51	U	0.5	U	0.53	U	0.58	U
SOLIDS, PERCENT				65.2		78.3		80.3		75.4		68.5	

**Table 2**  
**Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>**  
**RML THQ=3.0 Comparisons**

Result > Benchmarks A, B		CLP Sample Number:		MC0AC0	MC0AC1	MC0AC2	MC0AC3	MC0AC4	MC0AC5	MC0AC6	MC0AC7
Result > Benchmark A Only		Sample #:		SS-09	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15	SS-16
Result > Benchmark B Only		Sampling Location:		P-08	P-09	P-10	P-11	P-12	P-12	P-13	P-14
		Sub-Location		R03	R01	R06	R09	R08	R08	CP01	CP03
		Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Dupe of SS-13	Field Sample	Field Sample
		Matrix:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Units:		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Date Sampled:		2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020
		Date Analyzed:		3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020
		A	B								
		RML THQ=3.0 ResSoil mg/kg	RML THQ=3.0 IndSoil mg/kg								
Parameter	CAS No.			Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	230000	3400000	16200		14800		16800		12600	
Antimony	7440-36-0	94	1400	11.2	U	7.6	U	8.3	U	8.4	U
Arsenic	7440-38-2	68	300	15.7		17.3		17.3		11.5	
Barium	7440-39-3	46000	650000	121		138		138		63.6	
Beryllium	7440-41-7	470	6900	0.93	U	0.88		0.95		0.71	U
Cadmium	7440-43-9	210	2900	2.5		0.98		1.6		0.71	U
Calcium	7440-70-2			14200		5820		5830		4840	
Chromium	7440-47-3			66.3		57.7		94.3		63.1	
Cobalt	7440-48-4	70	1000	13		12.1		13		10.8	
Copper	7440-50-8	9400	140000	54.1		36.3		38.2		38.7	
Iron	7439-89-6	160000	2500000	45100		44400		44300		38500	
Lead	7439-92-1	400	800	189		144		221		145	
Magnesium	7439-95-4			4450		3460		3710		2990	
Manganese	7439-96-5	5500	77000	2120		1370		2340		1420	
Nickel	7440-02-0	4600	67000	30		24.1		26		22.3	
Potassium	7440-09-7			3190		2000		2590		1610	
Selenium	7782-49-2	1200	18000	6.5	U	4.5	U	4.8	U	4.5	U
Silver	7440-22-4	1200	18000	1.9	U	1.3	U	1.4	U	1.3	U
Sodium	7440-23-5			930	U	636	U	689	U	711	U
Thallium	7440-28-0	2.3	35	4.7	UJ	3.2	UJ	3.4	UJ	3.2	UJ
Vanadium	7440-62-2	1200	17000	43.8		38.9		54.4		41.5	
Zinc	7440-66-6	70000	1100000	962		463		691		469	
Mercury	7439-97-6	33	140	0.3		0.25		0.14		0.13	UJ
Hexavalent Chromium	18540-29-9	30	630	0.82	U	0.55	U	0.57	U	0.53	U
SOLIDS, PERCENT				48.4		73.2		69.6		75.1	

**Table 2**  
**Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>**  
**RML THQ=3.0 Comparisons**

Result > Benchmarks A, B		CLP Sample Number:		MC0AC8	MC0AC9	MC0AD0	
Result > Benchmark A Only		Sample #:		SS-17	SS-18	SS-19	
Result > Benchmark B Only		Sampling Location:		B-15	B-16	B-17	
		Sub-Location:		CP09	CP11	CP10	
		Sample Type:		Field Sample	Field Sample	Field Sample	
		Matrix:		Soil	Soil	Soil	
		Units:		mg/kg	mg/kg	mg/kg	
		Date Sampled:		2/19/2020	2/19/2020	2/19/2020	
		Date Analyzed:		3/10/2020	3/10/2020	3/10/2020	
		A	B				
		RML THQ=3.0 ResSoil mg/kg	RML THQ=3.0 IndSoil mg/kg				
Parameter	CAS No.			Result	Flag	Result	Flag
Aluminum	7429-90-5	230000	3400000	15600		17000	
Antimony	7440-36-0	94	1400	8.8	U	7.7	U
Arsenic	7440-38-2	68	300	18.2		21.3	
Barium	7440-39-3	46000	650000	168		269	
Beryllium	7440-41-7	470	6900	3		2.5	
Cadmium	7440-43-9	210	2900	1.8		0.64	U
Calcium	7440-70-2			44500		36200	
Chromium	7440-47-3			71.3		43.9	
Cobalt	7440-48-4	70	1000	7.4	U	6.8	
Copper	7440-50-8	9400	140000	38.6		25.1	
Iron	7439-89-6	160000	2500000	63500		44700	
Lead	7439-92-1	400	800	136		129	
Magnesium	7439-95-4			16000		10700	
Manganese	7439-96-5	5500	77000	1990		5510	
Nickel	7440-02-0	4600	67000	19.4		21.4	
Potassium	7440-09-7			1960		1550	
Selenium	7782-49-2	1200	18000	5.2	U	4.5	U
Silver	7440-22-4	1200	18000	1.5	U	1.3	U
Sodium	7440-23-5			737	U	639	U
Thallium	7440-28-0	2.3	35	3.7	UJ	3.2	UJ
Vanadium	7440-62-2	1200	17000	42.9		47.5	
Zinc	7440-66-6	70000	1100000	635		575	
Mercury	7439-97-6	33	140	0.15	UJ	0.16	
Hexavalent Chromium	18540-29-9	30	630	0.6	U	0.5	U
SOLIDS, PERCENT				66.2		79.4	

**Table 3**  
**Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>**  
**RML THQ=1.0 Comparisons**

Result > Benchmarks A, B		CLP Sample Number:		MC0AB2	MC0AB3	MC0AB4	MC0AB5	MC0AB6	MC0AB7	MC0AB8	MC0AB9				
Result > Benchmark A Only		Sample #:		SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08				
Result > Benchmark B Only		Sampling Location:		P-01	P-02	P-03	P-03	P-04	P-05	P-06	P-07				
		Sub-Location:		CP06	CP08	R11	R11	R10	R12	CP07	R13				
		Sample Type		Field Sample	Field Sample	Field Sample	Dupe of SS-03	Field Sample	Field Sample	Field Sample	Field Sample				
		Matrix:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
		Units:		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				
		Date Sampled:		2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020				
		Date Analyzed:		3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020				
		A	B												
		RML THQ=1.0 ResSoil mg/kg	RML THQ=1.0 IndSoil mg/kg												
Parameter	CAS No.			Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	77000	1100000	15000		16400		12900		12400		14300		13200	
Antimony	7440-36-0	31	470	1.3	J	7.3	U	7.2	U	6.9	U	8.4	U	8.6	U
Arsenic	7440-38-2	35	300	11.4		18.1		20.1		20.3		17.1		11.6	
Barium	7440-39-3	15000	220000	81.1		192		285		249		236		113	
Beryllium	7440-41-7	160	2300	0.65	J	1		0.8		0.83		1.2		0.85	
Cadmium	7440-43-9	71	980	0.15	J	0.93		2.4		2.1		1.4	U	0.71	U
Calcium	7440-70-2			4520		8040		19400		13900		11500		7160	
Chromium	7440-47-3			59.8		41.9		218		186		54.7		43.1	
Cobalt	7440-48-4	23	350	10.9		12.8		11.2		10.6		11.4		8.3	
Copper	7440-50-8	3100	47000	22		31.7		204		210		45.2		33.4	
Iron	7439-89-6	55000	820000	32400		34100		62700		64700		35900		30200	
Lead	7439-92-1	400	800	28		246		382		361		485		114	
Magnesium	7439-95-4			3310		4410		5060		4570		3720		2800	
Manganese	7439-96-5	1800	26000	1200		1110		4670		4000		1460		826	
Nickel	7440-02-0	1500	22000	22.3		28.8		32.2		26.7		22.6		19.9	
Potassium	7440-09-7			1700		2150		1920		1820		2330		1790	
Selenium	7782-49-2	390	5800	4.9	U	4.3	U	4.2	U	4	U	4.9	U	5	U
Silver	7440-22-4	390	5800	0.23	J	1.2	U	1.2	U	1.1	U	1.4	U	1.4	U
Sodium	7440-23-5			47.4	J	608	U	597	U	573	U	704	U	715	U
Thallium	7440-28-0	0.78	12	3.5	U	3	UJ	3	UJ	2.9	UJ	3.5	UJ	3.6	UJ
Vanadium	7440-62-2	390	5800	40.4		36.5		96.4		87.7		38.8		32.5	
Zinc	7440-66-6	23000	350000	194		3010		1000		927		682		353	
Mercury	7439-97-6	11	46	0.031	J	0.12	UJ	0.32		0.25		0.31		0.14	UJ
Hexavalent Chromium	18540-29-9	30	630	0.61	U	0.51	U	0.5	U	0.53	U	0.58	U	0.58	U
SOLIDS, PERCENT				65.2		78.3		80.3		75.4		68.5		68.7	

**Table 3**  
**Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>**  
**RML THQ=1.0 Comparisons**

<div>Result &gt; Benchmarks A, B</div> <div>Result &gt; Benchmark A Only</div> <div>Result &gt; Benchmark B Only</div>		CLP Sample Number:		MC0AC0		MC0AC1		MC0AC2		MC0AC3		MC0AC4		MC0AC5		MC0AC6		MC0AC7			
		Sample #:		SS-09		SS-10		SS-11		SS-12		SS-13		SS-14		SS-15		SS-16			
		Sampling Location:		P-08		P-09		P-10		P-11		P-12		P-12		P-13		P-14			
		Sub-Location		R03		R01		R06		R09		R08		R08		CP01		CP03			
		Sample Type		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Dupe of SS-13		Field Sample		Field Sample			
		Matrix:		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil			
		Units:		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg			
		Date Sampled:		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020			
Date Analyzed:		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020					
Parameter		CAS No.		A	B	Result		Flag		Result		Flag		Result		Flag		Result		Flag	
		RML THQ=1.0 ResSoil mg/kg	RML THQ=1.0 IndSoil mg/kg																		
Aluminum	7429-90-5	77000	1100000	16200		14800		16800		13600		12600		11900		10700		12000			
Antimony	7440-36-0	31	470	11.2	U	7.6	U	8.3	U	7.7	U	8.5	U	8.4	U	7.4	U	7.5	U		
Arsenic	7440-38-2	35	300	15.7		17.3		17.3		18.4		11.5		10.5		12.8		14.1			
Barium	7440-39-3	15000	220000	121		138		188		138		63.6		60.1		57		154			
Beryllium	7440-41-7	160	2300	0.93	U	0.88		0.95		0.81		0.71	U	0.7	U	0.61	U	0.95			
Cadmium	7440-43-9	71	980	2.5		0.98		1.6		1.1		0.71	U	0.7	U	0.61	U	0.63	U		
Calcium	7440-70-2			14200		5820		5830		4840		3300		3420		2900		8170			
Chromium	7440-47-3			66.3		57.7		94.3		63.1		30.9		29.8		37.4		37.5			
Cobalt	7440-48-4	23	350	13		12.1		13		10.8		8.6		7.9		7.5		13.3			
Copper	7440-50-8	3100	47000	54.1		36.3		38.2		38.7		21.1		20.6		21.3		45.3			
Iron	7439-89-6	55000	820000	45100		44400		44300		38500		25400		24000		24600		34700			
Lead	7439-92-1	400	800	189		144		221		145		39.5		41.2		41.4		30.9			
Magnesium	7439-95-4			4450		3460		3710		2990		2370		2300		2220		3470			
Manganese	7439-96-5	1800	26000	2120		1370		2340		1420		619		580		953		1160			
Nickel	7440-02-0	1500	22000	30		24.1		26		22.3		17.4		16.2		15.5		28.7			
Potassium	7440-09-7			3190		2000		2590		1610		1530		1460		1200		2030			
Selenium	7782-49-2	390	5800	6.5	U	4.5	U	4.8	U	4.5	U	5	U	4.9	U	4.3	U	4.4	U		
Silver	7440-22-4	390	5800	1.9	U	1.3	U	1.4	U	1.3	U	1.4	U	1.4	U	1.2	U	3			
Sodium	7440-23-5			930	U	636	U	689	U	638	U	711	U	698	U	614	U	627	U		
Thallium	7440-28-0	0.78	12	4.7	UJ	3.2	UJ	3.4	UJ	3.2	UJ	3.6	UJ	3.5	UJ	3.1	UJ	3.1	UJ		
Vanadium	7440-62-2	390	5800	43.8		38.9		54.4		41.5		31.2		29.6		30		28.7			
Zinc	7440-66-6	23000	350000	962		463		691		469		136		152		180		150			
Mercury	7439-97-6	11	46	0.3		0.25		0.14		0.14		0.13	UJ	0.14	UJ	0.12	UJ	0.14			
Hexavalent Chromium	18540-29-9	30	630	0.82	U	0.55	U	0.57	U	0.53	U	0.57	U	0.57	U	0.52	U	0.53	U		
SOLIDS, PERCENT						48.4		73.2		69.6		75.1		70.5		70.1		75.4			

**Table 3**  
**Analytical Results for TAL Metals, Hg, Cr<sup>+6</sup>**  
**RML THQ=1.0 Comparisons**

Result > Benchmarks A, B		CLP Sample Number:		MC0AC8	MC0AC9	MC0AD0			
Result > Benchmark A Only		Sample #:		SS-17	SS-18	SS-19			
Result > Benchmark B Only		Sampling Location:		B-15	B-16	B-17			
		Sub-Location:		CP09	CP11	CP10			
		Sample Type:		Field Sample	Field Sample	Field Sample			
		Matrix:		Soil	Soil	Soil			
		Units:		mg/kg	mg/kg	mg/kg			
		Date Sampled:		2/19/2020	2/19/2020	2/19/2020			
		Date Analyzed:		3/10/2020	3/10/2020	3/10/2020			
Parameter	CAS No.	A	B	Result	Flag	Result	Flag	Result	Flag
		RML THQ=1.0 ResSoil mg/kg	RML THQ=1.0 IndSoil mg/kg						
Aluminum	7429-90-5	77000	1100000	15600		17000		15900	
Antimony	7440-36-0	31	470	8.8	U	7.7	U	9.5	U
Arsenic	7440-38-2	35	300	18.2		21.3		43.9	
Barium	7440-39-3	15000	220000	168		269		142	
Beryllium	7440-41-7	160	2300	3		2.5		1.9	
Cadmium	7440-43-9	71	980	1.8		0.64	U	0.92	
Calcium	7440-70-2			44500		36200		13600	
Chromium	7440-47-3			71.3		43.9		76.3	
Cobalt	7440-48-4	23	350	7.4	U	6.8		9	
Copper	7440-50-8	3100	47000	38.6		25.1		64.1	
Iron	7439-89-6	55000	820000	63500		44700		58500	
Lead	7439-92-1	400	800	136		129		151	
Magnesium	7439-95-4			16000		10700		4420	
Manganese	7439-96-5	1800	26000	1990		5510		1870	
Nickel	7440-02-0	1500	22000	19.4		21.4		21.4	
Potassium	7440-09-7			1960		1550		1470	
Selenium	7782-49-2	390	5800	5.2	U	4.5	U	5.5	U
Silver	7440-22-4	390	5800	1.5	U	1.3	U	1.6	U
Sodium	7440-23-5			737	U	639	U	789	U
Thallium	7440-28-0	0.78	12	3.7	UJ	3.2	UJ	3.9	UJ
Vanadium	7440-62-2	390	5800	42.9		47.5		58.9	
Zinc	7440-66-6	23000	350000	635		575		447	
Mercury	7439-97-6	11	46	0.15	UJ	0.16		0.16	UJ
Hexavalent Chromium	18540-29-9	30	630	0.6	U	0.5	U	0.67	U
SOLIDS, PERCENT				66.2		79.4		59.9	

Table 4  
Analytical Results and  
WV Natural Background Levels Comparison

CLP Sample Number:		MC0AB2 SS-01 P-01	MC0AB3 SS-02 P-02	MC0AB4 SS-03 P-03	MC0AB5 SS-04 P-03	MC0AB6 SS-05 P-04	MC0AB7 SS-06 P-05	MC0AB8 SS-07 P-06	MC0AB9 SS-08 P-07
Sample #:		Field Sample	Field Sample	Field Sample	Dupe of SS-03	Field Sample	Field Sample	Field Sample	Field Sample
Sampling Location:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Type		2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020
Matrix: Units:		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Sampled:		3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020	3/10/2020
Date Analyzed:									
		A							
		WV Background Soil (Mean) mg/kg							
Parameter	CAS No.	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	52921	15000	16400		12900	12400	14300	13200
Antimony	7440-36-0	0.61	1.3						
Arsenic	7440-38-2	8.3	11.4	18.1		20.1	20.3	17.1	11.6
Barium	7440-39-3	380	81.1	192		285	249	236	113
Beryllium	7440-41-7	1.9	0.65	1		0.8	0.83	1.2	0.85
Cadmium	7440-43-9	0.3	0.15	0.93		2.4	2.1	1.4	
Calcium	7440-70-2	1568	4520	8040	19400	13900	11500	7160	9090
Chromium	7440-47-3	40.5	59.8	41.9	218	186	54.7	49.1	44.8
Cobalt	7440-48-4	14	10.9	12.8	11.2	10.6	11.4	8.3	12.4
Copper	7440-50-8	17.5	22	31.7	204	210	45.2	33.4	28.3
Iron	7439-89-6	26256	32400	34100	62700	64700	35900	30200	33300
Lead	7439-92-1	24.8	28	246	382	361	485	114	43.9
Magnesium	7439-95-4	3414	3310	4410	5060	4570	3720	2800	4960
Manganese	7439-96-5	907	1200	1110	4670	4000	1460	826	991
Nickel	7440-02-0	20.4	22.3	28.8	32.2	26.7	22.6	19.9	33.5
Potassium	7440-09-7	13650	1700	2150	1920	1820	2330	1790	2500
Selenium	7782-49-2	0.5							
Silver	7440-22-4	<1	0.23						
Sodium	7440-23-5	1991	47.4						
Thallium	7440-28-0	0.5							
Vanadium	7440-62-2	63	40.4	36.5	96.4	87.7	38.8	32.5	33
Zinc	7440-66-6	67	194	3010	1000	927	682	353	1110
Mercury	7439-97-6	0.06	0.031		0.32	0.25	0.31		
Hexavalent Chromium	18540-29-9								
SOLIDS, PERCENT			65.2	78.3	80.3	75.4	68.5	68.7	61.2

Table 4  
Analytical Results and  
WV Natural Background Levels Comparison

CLP Sample Number: Sample #: Sampling Location: Sample Type: Matrix: Units: Date Sampled: Date Analyzed:			MCDAC0 SS-09 P-08 Field Sample Soil mg/kg 2/19/2020 3/10/2020		MCDAC1 SS-10 P-09 Field Sample Soil mg/kg 2/19/2020 3/10/2020		MCDAC2 SS-11 P-10 Field Sample Soil mg/kg 2/19/2020 3/10/2020		MCDAC3 SS-12 P-11 Field Sample Soil mg/kg 2/19/2020 3/10/2020		MCDAC4 SS-13 P-12 Field Sample Soil mg/kg 2/19/2020 3/10/2020		MCDAC5 SS-14 P-12 Dupe of SS-13 Soil mg/kg 2/19/2020 3/10/2020		MCDAC6 SS-15 P-13 Field Sample Soil mg/kg 2/19/2020 3/10/2020		MCDAC7 SS-16 P-14 Field Sample Soil mg/kg 2/19/2020 3/10/2020	
Parameter	CAS No.	A WV Background Soil (Mean) mg/kg	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	52921	16200		14800		16800		13600		12600		11900		10700		12000	
Antimony	7440-36-0	0.61																
Arsenic	7440-38-2	8.3	15.7		17.3		17.3		18.4		11.5		10.5		12.8		14.1	
Barium	7440-39-3	380	121		138		188		138		63.6		60.1		57		154	
Beryllium	7440-41-7	1.9			0.88		0.95		0.81								0.95	
Cadmium	7440-43-9	0.3	2.5		0.98		1.6		1.1									
Calcium	7440-70-2	1568	14200		5820		5830		4840		3300		3420		2900		6170	
Chromium	7440-47-3	40.5	66.3		57.7		94.3		63.1		30.9		29.8		37.4		37.5	
Cobalt	7440-48-4	14	13		12.1		13		10.8		8.6		7.9		7.5		13.3	
Copper	7440-50-8	17.5	54.1		36.3		38.2		38.7		21.1		20.6		21.3		45.3	
Iron	7439-89-6	26256	45100		44400		44300		38500		25400		24000		24600		34700	
Lead	7439-92-1	24.8	189		144		221		145		39.5		41.2		41.4		30.9	
Magnesium	7439-95-4	3414	4450		3460		3710		2990		2370		2300		2220		3470	
Manganese	7439-96-5	907	2120		1370		2340		1420		619		580		953		1160	
Nickel	7440-02-0	20.4	30		24.1		26		22.3		17.4		16.2		15.5		28.7	
Potassium	7440-09-7	13650	3190		2000		2590		1610		1530		1460		1200		2030	
Selenium	7782-49-2	0.5																
Silver	7440-22-4	<1															3	
Sodium	7440-23-5	1991																
Thallium	7440-28-0	0.5																
Vanadium	7440-62-2	63	43.8		38.9		54.4		41.5		31.2		29.6		30		28.7	
Zinc	7440-66-6	67	962		463		691		469		136		152		180		150	
Mercury	7439-97-6	0.06	0.3		0.25		0.14		0.14								0.14	
Hexavalent Chromium	18540-29-9																	
SOLIDS, PERCENT			48.4		73.2		69.6		75.1		70.5		70.1		76.9		75.4	

Table 4  
Analytical Results and  
WV Natural Background Levels Comparison

		CLP Sample Number: Sample #: Sampling Location: Sample Type Matrix: Units: Date Sampled: Date Analyzed:	MC0AC8 SS-17 B-15 Field Sample    Soil mg/kg 2/19/2020 3/10/2020		MC0AC9 SS-18 B-16 Field Sample    Soil mg/kg 2/19/2020 3/10/2020		MC0AD0 SS-19 B-17 Field Sample    Soil mg/kg 2/19/2020 3/10/2020	
		A WV Background Soil (Mean) mg/kg						
Parameter	CAS No.		Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	52921	15600		17000		15900	
Antimony	7440-36-0	0.61						
Arsenic	7440-38-2	8.3	18.2		21.3		43.9	
Barium	7440-39-3	380	168		269		142	
Beryllium	7440-41-7	1.9	3		2.5		1.9	
Cadmium	7440-43-9	0.3	1.8				0.92	
Calcium	7440-70-2	1568	44500		36200		13600	
Chromium	7440-47-3	40.5	71.3		43.9		76.3	
Cobalt	7440-48-4	14			6.8		9	
Copper	7440-50-8	17.5	38.6		25.1		64.1	
Iron	7439-89-6	26256	63500		44700		58500	
Lead	7439-92-1	24.8	136		129		151	
Magnesium	7439-95-4	3414	16000		10700		4420	
Manganese	7439-96-5	907	1990		5510		1870	
Nickel	7440-02-0	20.4	19.4		21.4		21.4	
Potassium	7440-09-7	13650	1960		1550		1470	
Selenium	7782-49-2	0.5						
Silver	7440-22-4	<1						
Sodium	7440-23-5	1991						
Thallium	7440-28-0	0.5						
Vanadium	7440-62-2	63	42.9		47.5		58.9	
Zinc	7440-66-6	67	635		575		447	
Mercury	7439-97-6	0.06			0.16			
Hexavalent Chromium	18540-29-9							
SOLIDS, PERCENT			66.2		79.4		59.9	

PROJECT INFORMATION										ANALYSIS INFORMATION										ABBREVIATED NOTES												
Site/Project Name:		R25754		Lab Name:		EMSL04		Method:		Analysis By:		Not-Response		Data Entry Date:		1/9/2020		(i) Inert-CA Types:		(ii) Valid Mineral Types:		AC - actinolite		AM - amphibole		AN - anthophyllite		CH - chrysotile		(i) OM Description, Standard Sections, Textures:		
State/Federal Site/Project Identifier:		R25754		Lab Job Number:		043004637				Analysis Date:		Not-Response		QA No:		Not-Response		Not-CA - Not a CA sample		CR - crocidolite		TR - tremolite		WR - winchite		OR - orthopyroxene		OA - other amphibole		Etonite		
Site/Project Identifier Code:		R25754		Date Received by lab:		02/21/20		EPA 800, VE		Data Entry By:		Not-Response		QA Date:		5/15/2020		LD - Lab Duplicate		NAM - non-asbestos material		OM - other mineral type (specify in "other mineral description" field)										
Enter per centage as a value, not a fraction (Example: Enter 50% as 50, not 0.50)																																
Client Sample Number	Sample Type	Index Suffix Char	Index Suffix No.	QA Type	Lab Sample Number	Sample Description	Ref. Material	Base Mineral Types Reference Material (R)				Actinolite (AC)		Amphibole (AM)		Anthophyllite (AN)		Chrysotile (CH)		Crocidolite (CR)		Tremolite (TR)		Winchite (WR)		Other Amphibole (OA)		Other Mineral Type (OM)		Comments?	Comments	
								Qual	AC-AF (%)	AC-MF (%)	Qual	AM-AF (%)	AM-MF (%)	Qual	AN-AF (%)	AN-MF (%)	Qual	CH-AF (%)	CH-MF (%)	Qual	CR-AF (%)	CR-MF (%)	Qual	TR-AF (%)	TR-MF (%)	Qual	WR-AF (%)	WR-MF (%)	Qual			OA-AF (%)
89-01	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-02	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-03	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-04	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-05	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-06	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-07	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-08	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-09	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-10	Soil			Not QA	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-11	Soil			Not QA	042004637-001	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-12	Soil			Not QA	042004637-002	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-13	Soil			Not QA	042004637-003	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-14	Soil			Not QA	042004637-004	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-15	Soil			Not QA	042004637-005	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-16	Soil			Not QA	042004637-006	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-17	Soil			Not QA	042004637-007	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-18	Soil			Not QA	042004637-008	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-19	Soil			Not QA	042004637-009	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-01	Soil			LD	042004637-000	Brown-Non-F	Tremolite	TR	U			U			U			U			U			U								
89-07	Soil			LD	042004637-000	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								
89-12	Soil			LD	042004637-002	Brown-Non-F	Actinolite	AC	U			U			U			U			U			U								

# Table 5 - Soil Samples Asbestos Results

R36764\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm  
National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count

Site or Project Name:	R35754
State/Federal Site or Project Identifier:	R35754
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job No:	042004637
Date received by lab:	02/21/20
Analyzed by:	Non-responsive
Analysis Date:	3/5/2020

Point Count Method: EPA 800.10

Data Entry by:	Non-responsive
Data Entry Date:	3/9/2020
QA by:	Non-responsive
QA Date:	3/19/2020

## ABBREVIATED NOTES:

(a) Valid QA Types:

Not QA Not a QA sample  
LD Lab Duplicate

(b) Valid Mineral Types:

AC	actinolite	WRTA	winchite/actinolite/tremolite/actinolite
AM	amosite	OA	other amphibole
AN	anthophyllite	NAM	non-asbestos material
CH	chrysotile	OM	other mineral type
CR	crocidolite		
TR	tremolite		

(c) OM Description Standard Selections:

Tacnile  
Eriolite

Client Sample Number	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample Number	Sample Appearance	Points Counted	Counts for each mineral type (b)											Deviation?	Comments
							AC	AM	AN	CH	CR	TR	WRTA	QA	NAM	OM	CM Type (c)		
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	<0.25% CH - OA 3/5/2020
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	OA 3/5/2020
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	0	No	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

## Table 5 - Soil Samples

## Asbestos Results

R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk &amp; Soil Analysis by PLM Point Count

## ANALYTICAL REPORT

FILE NAME: R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm

PROJECT INFORMATION			ANALYSIS INFORMATION			ABBREVIATED NOTES		
Site/Project Name:	R35754		Method:	Analysis By:	Non-responsive based on	(a) Valid QA Types:	(b) Valid Mineral Types:	
State/Federal Site/Project Identifier:	R35754		EPA 800_FC	Analysis Date:	3/5/2020	Not QA - Not a QA sample	AC - actinolite AM - amosite AN - anthophyllite	
Site/Project Identifier Code:	R35754			Data Entry by:	Non-responsive based on	LD - Lab Duplicate	CH - chrysotile CR - crocidolite TR - tremolite	
Lab Name:	EMSL04			Data Entry Date:	3/9/2020	(c) OM Description Standard	WRTA - winchite/richterite/tremolite/actinolite	
Lab Job Number:	042004637			QA by:	Non-responsive based on	Selections:	OA - other amphibole NAM - non-asbestos material	
Date Received by lab:	02/21/20			QA Date:	3/10/2020	Taconite Erionite	OM - other mineral type (specify in "other mineral description" field)	

Client Sample ID	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample ID	Sample Appearance	Points Counted	Grav. Reduction		Concentration (%) for each mineral type (b)											OM Type (b)	Total (%)
							Ash fraction	Acid Fraction	AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM			
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fib	400	1.000	1.000													0.0
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fib	400	1.000	1.000													0.0
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fib	400	1.000	1.000													0.0
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fib	400	1.000	1.000													0.0
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fib	400	1.000	1.000													0.0
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fib	400	1.000	1.000													0.0
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fib	400	1.000	1.000													0.0
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fib	400	1.000	1.000													0.0
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fib	400	1.000	1.000													0.0
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fib	400	1.000	1.000													0.0
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fib	400	1.000	1.000													0.0
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fib	400	1.000	1.000													0.0
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fib	400	1.000	1.000													0.0
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fib	400	1.000	1.000													0.0
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fib	400	1.000	1.000													0.0
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fib	400	1.000	1.000													0.0
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fib	400	1.000	1.000													0.0
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fib	400	1.000	1.000													0.0
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fib	400	1.000	1.000													0.0
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fib	400	1.000	1.000													0.0
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fib	400	1.000	1.000													0.0
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fib	400	1.000	1.000													0.0

TechLaw, Inc.  
START 5 Region III  
EP-S3-15-03

Weirton BOP Implosion Site  
Removal Assessment Trip Report  
Revision: Final  
June 30, 2020

**ATTACHMENT 1**

**CHAIN-OF-CUSTODY/TRAFFIC REPORTS**

## USEPA CLP COC (REGION COPY)

DateShipped: 2/20/2020

CarrierName: FedEx

AirbillNo: 777818097875

## CHAIN OF CUSTODY RECORD

Weirton BOP Implosion Site/WV

Case #: 48747

Cooler #: K30

No: 3-022020-130922-0003

Lab: Bonner Analytical Testing Company

Lab Contact: Non-responsive based on

Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-01	MC0AB2	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1048 (6 C) (1)	P-01	02/19/2020 09:15	Field Sample
SS-02	MC0AB3	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1053 (6 C) (1)	P-02	02/19/2020 09:37	Field Sample
SS-03	MC0AB4	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1056 (6 C) (1)	P-03	02/19/2020 10:05	Field Sample
SS-04	MC0AB5	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1059 (6 C) (1)	P-03	02/19/2020 10:10	Dupe of SS-03
SS-05	MC0AB6	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1062 (6 C) (1)	P-04	02/19/2020 10:20	Field Sample
SS-06	MC0AB7	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1065 (6 C) (1)	P-05	02/19/2020 10:35	Field Sample
SS-07	MC0AB8	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1068 (6 C) (1)	P-06	02/19/2020 10:50	Field Sample
SS-08	MC0AB9	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1071 (6 C) (1)	P-07	02/19/2020 11:15	Field Sample
SS-09	MC0AC0	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1074 (6 C) (1)	P-08	02/19/2020 11:50	Field Sample
SS-10	MC0AC1	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1077 (6 C) (1)	P-09	02/19/2020 11:55	Field Sample
SS-11	MC0AC2	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1080 (6 C) (1)	P-10	02/19/2020 12:20	Field Sample
SS-12	MC0AC3	Soil/ Non-responsive based on Non-responsive based on re Non-responsive based on re	Grab	TM+Hg(21)	3-1083 (6 C) (1)	P-11	02/19/2020 13:25	Field Sample

Sample(s) to be used for Lab QC: SS-01 Tag 3-1048 - Special Instructions: Please return cooler with FedEx return label inside	Shipment for Case Complete? Y
	Samples Transferred From Chain of Custody #
Analysis Key: TM+Hg=CLP TAL ICP-AES Metals + Hg	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

## USEPA CLP COC (REGION COPY)

DateShipped: 2/20/2020

CarrierName: FedEx

AirbillNo: 777818097875

## CHAIN OF CUSTODY RECORD

Weirton BOP Implosion Site/WW

Case #: 48747

Cooler #: K30

No: 3-022020-130922-0003

Lab: Bonner Analytical Testing Company

Lab Contact: non-responsive

Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-13	MC0AC4	Soil/ non-responsive	Grab	TM+Hg(21)	3-1086 (6 C) (1)	P-12	02/19/2020 13:30	Field Sample
SS-14	MC0AC5	Soil/ non-responsive	Grab	TM+Hg(21)	3-1089 (6 C) (1)	P-12	02/19/2020 13:40	Dupe of SS-13
SS-15	MC0AC6	Soil/ non-responsive	Grab	TM+Hg(21)	3-1092 (6 C) (1)	P-13	02/19/2020 14:07	Field Sample
SS-16	MC0AC7	Soil/ non-responsive	Grab	TM+Hg(21)	3-1095 (6 C) (1)	P-14	02/19/2020 14:23	Field Sample
SS-17	MC0AC8	Soil/ non-responsive	Grab	TM+Hg(21)	3-1098 (6 C) (1)	B-15	02/19/2020 14:45	Field Sample
SS-18	MC0AC9	Soil/ non-responsive	Grab	TM+Hg(21)	3-1101 (6 C) (1)	B-16	02/19/2020 15:10	Field Sample
SS-19	MC0AD0	Soil/ non-responsive	Grab	TM+Hg(21)	3-1104 (6 C) (1)	B-17	02/19/2020 15:35	Field Sample
RB-01	MC0AD1	Water/ non-responsive	Grab	TM+Hg(21)	3-1107 (HNO3 pH<2) (1)	Z	02/19/2020 07:30	Rinsate Blank

Special Instructions: Please return cooler with FedEx return label inside

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: TM+Hg=CLP TAL ICP-AES Metals + Hg

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

## USEPA CLP COC (REGION COPY)

DateShipped: 2/20/2020

CarrierName: FedEx

AirbillNo: 777818186723

## CHAIN OF CUSTODY RECORD

Weirton BOP Implosion Site/WV

DAS #: R35756

Cooler #: K5

No: 3-022020-125952-0002

Lab: USEPA Region III Environmental Science Center

Lab Contact: Non-responsive base

Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-01	R35756-01	Soil/Non-responsive base	Grab	Cr+6(21)	3-1052 (6 C) (1)	P-01	02/19/2020 09:15	Field Sample
SS-02	R35756-02	Soil/Non-responsive base	Grab	Cr+6(21)	3-1055 (6 C) (1)	P-02	02/19/2020 09:37	Field Sample
SS-03	R35756-03	Soil/Non-responsive base	Grab	Cr+6(21)	3-1058 (6 C) (1)	P-03	02/19/2020 10:05	Field Sample
SS-04	R35756-04	Soil/Non-responsive base	Grab	Cr+6(21)	3-1061 (6 C) (1)	P-03	02/19/2020 10:10	Dupe of SS-03
SS-05	R35756-05	Soil/Non-responsive base	Grab	Cr+6(21)	3-1064 (6 C) (1)	P-04	02/19/2020 10:20	Field Sample
SS-06	R35756-06	Soil/Non-responsive base	Grab	Cr+6(21)	3-1067 (6 C) (1)	P-05	02/19/2020 10:35	Field Sample
SS-07	R35756-07	Soil/Non-responsive base	Grab	Cr+6(21)	3-1070 (6 C) (1)	P-06	02/19/2020 10:50	Field Sample
SS-08	R35756-08	Soil/Non-responsive base	Grab	Cr+6(21)	3-1073 (6 C) (1)	P-07	02/19/2020 11:15	Field Sample
SS-09	R35756-09	Soil/Non-responsive base	Grab	Cr+6(21)	3-1076 (6 C) (1)	P-08	02/19/2020 11:50	Field Sample
SS-10	R35756-10	Soil/Non-responsive base	Grab	Cr+6(21)	3-1079 (6 C) (1)	P-09	02/19/2020 11:55	Field Sample
SS-11	R35756-11	Soil/Non-responsive base	Grab	Cr+6(21)	3-1082 (6 C) (1)	P-10	02/19/2020 12:20	Field Sample
SS-12	R35756-12	Soil/Non-responsive base	Grab	Cr+6(21)	3-1085 (6 C) (1)	P-11	02/19/2020 13:25	Field Sample

Sample(s) to be used for Lab QC: SS-01 Tag 3-1052 - Special Instructions: Please return cooler with FedEx return label inside	Shipment for Case Complete? Y
	Samples Transferred From Chain of Custody #
Analysis Key: Cr+6=Hexavalent Chromium	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

## USEPA CLP COC (REGION COPY)

DateShipped: 2/20/2020

CarrierName: FedEx

AirbillNo: 777818186723

## CHAIN OF CUSTODY RECORD

Weirton BOP Implosion Site/WV

DAS #: R35756

Cooler #: K5

No: 3-022020-125952-0002

Lab: USEPA Region III Environmental Science Center

Lab Contact: Kevin Poff

Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-13	R35756-13	Soil/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1088 (6 C) (1)	P-12	02/19/2020 13:30	Field Sample
SS-14	R35756-14	Soil/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1091 (6 C) (1)	P-12	02/19/2020 13:40	Dupe of SS-13
SS-15	R35756-15	Soil/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1094 (6 C) (1)	P-13	02/19/2020 14:07	Field Sample
SS-16	R35756-16	Soil/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1097 (6 C) (1)	P-14	02/19/2020 14:23	Field Sample
SS-17	R35756-17	Soil/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1100 (6 C) (1)	B-15	02/19/2020 14:45	Field Sample
SS-18	R35756-18	Soil/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1103 (6 C) (1)	B-16	02/19/2020 15:10	Field Sample
SS-19	R35756-19	Soil/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1106 (6 C) (1)	B-17	02/19/2020 15:35	Field Sample
RB-01	R35756-R1	Water/ <small>Non-responsive Non-responsive Non-responsive</small>	Grab	Cr+6(21)	3-1108 (NH4OH)/(NH4)2SO4 pH 9.5) (1)	Z	02/19/2020 07:30	Rinsate Blank

Special Instructions: Please return cooler with FedEx return label inside

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Cr+6=Hexavalent Chromium

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

## USEPA CLP COC (REGION COPY)

DateShipped: 2/20/2020

CarrierName: FedEx

AirbillNo: 777817941333

## CHAIN OF CUSTODY RECORD

Weirton BOP Implosion Site/WV

DAS #: R35754

Cooler #: K27

No: 3-022020-124148-0001

Lab: EMSL Analytical, Inc.

Lab Contact: Non-responsive based  
Non-responsive based

Lab Phone: 856-303-2556

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-01	R35754-01	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1050 (None) (1)	P-01	02/19/2020 09:15	Field Sample
SS-02	R35754-02	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1054 (None) (1)	P-02	02/19/2020 09:37	Field Sample
SS-03	R35754-03	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1057 (None) (1)	P-03	02/19/2020 10:05	Field Sample
SS-04	R35754-04	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1060 (None) (1)	P-03	02/19/2020 10:10	Dupe of SS-03
SS-05	R35754-05	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1063 (None) (1)	P-04	02/19/2020 10:20	Field Sample
SS-06	R35754-06	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1066 (None) (1)	P-05	02/19/2020 10:35	Field Sample
SS-07	R35754-07	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1069 (None) (1)	P-06	02/19/2020 10:50	Field Sample
SS-08	R35754-08	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1072 (None) (1)	P-07	02/19/2020 11:15	Field Sample
SS-09	R35754-09	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1075 (None) (1)	P-08	02/19/2020 11:50	Field Sample
SS-10	R35754-10	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1078 (None) (1)	P-09	02/19/2020 11:55	Field Sample
SS-11	R35754-11	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1081 (None) (1)	P-10	02/19/2020 12:20	Field Sample
SS-12	R35754-12	Soil/ Non-responsive based Non-responsive based	Grab	Asbest(21)	3-1084 (None) (1)	P-11	02/19/2020 13:25	Field Sample

Special Instructions: Please return cooler with FedEx return label	Shipment for Case Complete? Y
	Samples Transferred From Chain of Custody #
Analysis Key: Asbest=Asbestos	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

AirbillNo: 777817941333

### CHAIN OF CUSTODY RECORD

Weirton BOP Implosion Site/WV

**DAS #: R35754**

Cooler #: K27

**No: 3-022020-124148-0001**

Lab: EMSL Analytical, Inc.

Lab Contact: Non-responsive based  
Non-responsive based

Lab Phone: 856-303-2556

[illegible]

Special Instructions: Please return cooler with FedEx return label	Shipment for Case Complete? Y
	Samples Transferred From Chain of Custody #
Analysis Key: Asbest=Asbestos	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

TechLaw, Inc.  
START 5 Region III  
EP-S3-15-03

Weirton BOP Implosion Site  
Removal Assessment Trip Report  
Revision: Final  
June 30, 2020

**ATTACHMENT 2**

**DATA VALIDATION REPORT**  
**TOTAL METALS AND MERCURY**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
Environmental Sciences Center  
701 Mapes Road  
Fort Meade, Maryland 20755-5350

DATE: 5/5/2020

SUBJECT: Region III Data QA Review

FROM: Eric Graybill  
Region III ESAT RPO (3LS20)

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

TO: DEBORAH LINDSEY  
Hazardous Site Cleanup Division (HSCD)

Attached is the data validation report for the WEIRTON BOP IMPLOSION SITE site for RAS# 48747; SDG# MC8TR1 completed by the Region III Environmental Services Assistance Team (ESAT) contractor, ICF International, under the direction of Region III LSASD.

If you have any questions regarding this review, please call Eric Graybill at (410)-305-2665.

Attachment

CC:

Non-responsive based on rev  
Non-responsive based on rev  
Non-responsive based on rev  
Non-responsive based on rev

TO: #0002 TDF: #0320061





ICF  
ESAT Region 3  
US Environmental Protection Agency Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Phone 410-305-3012

**Date:** May 4, 2020

**To:** ESAT Region 3 Project Officer

**From:** Non-responsive based on revised scope  
Non-responsive based on revised scope  
Validator

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Reviewer

**Subject:** Inorganic Data Validation (S4VEM)  
Weirton BOP Implosion  
48747, MC8TR1

#### Overview

This data package consisted of nineteen (19) soil samples including two field duplicate pairs analyzed for total metals by ICP-AES and for mercury (Hg) by cold vapor atomic absorption technique.

Analysis was performed by Bonner Analytical Testing Company (BON) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ISM02.4.

Data were validated according to the National Functional Guidelines for Inorganic Superfund Methods Data Review and applicable USEPA Region 3 modifications. Electronic validation was performed by the Electronic Data eXchange & Evaluation System (EXES). The validation report has been assigned the Superfund Data Validation Label Stage\_3\_Validation\_Electronic\_Manual (S3VEM).

The following validation narrative is an evaluation of laboratory reported data based on the reconciliation electronic data package available through the EXES Data Manager dated March 17, 2020.

Rinsate blank MCOAD1 (analyzed in SDG MCBTR2) was used in evaluating blank contamination for the associated samples in this case based on sampling date.

#### Summary

No data quality outliers or technical deficiencies were identified that would require rejection of sample results. A matrix spike outlier and blank contamination issues resulted in estimated sample results for several analytes.

#### Minor Problems

Laboratory instrumentation reported negative values greater than absolute value of the Method Detection Limits (MDL) for thallium (Tl) and Hg in blank analyses. Positive results less than the Contract Required Quantitation Limits (CRQLs) for these analytes have been reported at the CRQL and qualified "UJ". Quantitation limits for these analytes are estimated and qualified "UJ".

The matrix spike recovery was low (<75%) for antimony (Sb) in sample MC0AB2. The post digestion spike recovery was within limits. The quantitation limit for Sb is estimated in this sample and has been qualified "UJ".

#### **Notes**

Analytes detected below the CRQLs are estimated and have been qualified "J".

Antimony (Sb), beryllium (Be), cadmium (Cd), cobalt (Co), silver (Ag) and sodium (Na) have been detected in laboratory blanks associated with the sample in this SDG. Concentrations of these analytes which were less than the CRQL have been reported at the CRQL and qualified "U".

No positive results were reported for the associated rinsate blank. No data were qualified based on the rinsate blank.

Laboratory duplicate, serial dilution and Laboratory Control Sample (LCS) analyses reported acceptable results.

The matrix spike recovery was outside control limits for lead (Pb) in sample MC0AB2. The initial concentration for Pb was greater than four times (>4X) the amount of the spike added. No data were qualified.

Concentrations for the following analytes exceeded the calibration range in the initial analysis of samples listed. These samples were reanalyzed at dilution to bring the concentration of the analyte within the calibration range. Results for these analytes are reported from dilution.

Sample	DF	Analyte(s)
MC0AB4	5X	Iron (Fe), Manganese (Mn)
MC0AB5	3X	Fe, Mn
MC0AC2	2X	Mn
MC0AC8, MC0AD0	2X	Fe
MC0AC9	5X	Mn

Results for the field duplicate pairs, samples MC0AB4/MC0AB5 and MC0AC4/MC0AC5, were within  $\pm$  CRQL, 25% RPD except for calcium (Ca) in duplicate pair MC0AB4/MC0AB5. Data are not qualified based on field duplicate precision. No data were qualified based on this finding.

All Sample numbers in this SDG were previously used by the laboratory in their LIMS as an SDG number. Per the Region, the SDG number for this case was changed to MC8TR1.

Sample calculation checks were performed for several analytes in several samples. All calculated results had RPDs less than 5% of the reported results. No sample data were qualified.

Validation qualifiers are only applied by the validator to field samples. Qualifiers may be applied by EXES electronic validation to laboratory quality control samples.

**Glossary of Inorganic Data Qualifier Codes**

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Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
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- |    |   |
|----|---|
| R  | The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample. |
| UJ | The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.                          |
| U  | The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit  |
| B  | The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.   |
| J  | The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.                              |
| J+ | The result is an estimated quantity, but the result may be biased high.   |
| J- | The result is an estimated quantity, but the result may be biased low.  |

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: LCS01

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids: 100

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	42.2		mg/kg	42.2		1	YES	NV
Antimony	Spike	12.1		mg/kg	12.1		1	YES	NV
Arsenic	Spike	1.9		mg/kg	1.9		1	YES	NV
Barium	Spike	41.7		mg/kg	41.7		1	YES	NV
Beryllium	Spike	1.0		mg/kg	1.0		1	YES	NV
Cadmium	Spike	1.1		mg/kg	1.1		1	YES	NV
Calcium	Spike	1080		mg/kg	1080		1	YES	NV
Chromium	Spike	2.3		mg/kg	2.3		1	YES	NV
Cobalt	Spike	10.9		mg/kg	10.9		1	YES	NV
Copper	Spike	5.6		mg/kg	5.6		1	YES	NV
Iron	Spike	21.6		mg/kg	21.6		1	YES	NV
Lead	Spike	2.1		mg/kg	2.1		1	YES	NV
Magnesium	Spike	1050		mg/kg	1050		1	YES	NV
Manganese	Spike	3.3		mg/kg	3.3		1	YES	NV
Nickel	Spike	8.6		mg/kg	8.6		1	YES	NV
Potassium	Spike	1000		mg/kg	1000		1	YES	NV
Selenium	Spike	7.2		mg/kg	7.2		1	YES	NV
Silver	Spike	1.1		mg/kg	1.1		1	YES	NV
Sodium	Spike	1020		mg/kg	1020		1	YES	NV
Thallium	Spike	5.0		mg/kg	5.0		1	YES	NV
Vanadium	Spike	10.9		mg/kg	10.9		1	YES	NV
Zinc	Spike	13.5		mg/kg	13.5		1	YES	NV

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-01	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.026	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TRI

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-01

pH:

Sample Date: 02/19/2020

Sample Time: 09:15:00

% Moisture:

% Solids: 66.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15600		mg/kg	15600		1	YES	S4VEM
Antimony	Target	8.3	UJ	mg/kg	1.5	J*	1	YES	S4VEM
Arsenic	Target	11.2		mg/kg	11.2		1	YES	S4VEM
Barium	Target	84.9		mg/kg	84.9		1	YES	S4VEM
Beryllium	Target	0.69	U	mg/kg	0.68	J	1	YES	S4VEM
Cadmium	Target	0.69	U	mg/kg	0.13	J	1	YES	S4VEM
Calcium	Target	4060		mg/kg	4060		1	YES	S4VEM
Chromium	Target	60.6		mg/kg	60.6		1	YES	S4VEM
Cobalt	Target	10.8		mg/kg	10.8		1	YES	S4VEM
Copper	Target	23.0		mg/kg	23.0		1	YES	S4VEM
Iron	Target	34100		mg/kg	34100		1	YES	S4VEM
Lead	Target	31.4		mg/kg	31.4		1	YES	S4VEM
Magnesium	Target	3390		mg/kg	3390		1	YES	S4VEM
Manganese	Target	1250		mg/kg	1250		1	YES	S4VEM
Nickel	Target	23.5		mg/kg	23.5		1	YES	S4VEM
Potassium	Target	1810		mg/kg	1810		1	YES	S4VEM
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.22	J	1	YES	S4VEM
Sodium	Target	693	U	mg/kg	51.2	J	1	YES	S4VEM
Thallium	Target	3.5	UJ	mg/kg	3.5	U	1	YES	S4VEM
Vanadium	Target	41.4		mg/kg	41.4		1	YES	S4VEM
Zinc	Target	205		mg/kg	205		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2A	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	17.4		mg/kg	17.4		1	YES	NV

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TRI

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2D

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location:

pH:

Sample Date: 02/19/2020

Sample Time: 09:15:00

% Moisture:

% Solids: 66.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.031	J	mg/kg	0.031	J	1	YES	NV

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2D

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location:

pH:

Sample Date: 02/19/2020

Sample Time: 09:15:00

% Moisture:

% Solids: 66.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15000		mg/kg	15000		1	YES	NV
Antimony	Target	1.3	J	mg/kg	1.3	J	1	YES	NV
Arsenic	Target	11.4		mg/kg	11.4		1	YES	NV
Barium	Target	81.1		mg/kg	81.1		1	YES	NV
Beryllium	Target	0.65	J	mg/kg	0.65	J	1	YES	NV
Cadmium	Target	0.15	J	mg/kg	0.15	J	1	YES	NV
Calcium	Target	4520		mg/kg	4520		1	YES	NV
Chromium	Target	59.8		mg/kg	59.8		1	YES	NV
Cobalt	Target	10.9		mg/kg	10.9		1	YES	NV
Copper	Target	22.0		mg/kg	22.0		1	YES	NV
Iron	Target	32400		mg/kg	32400		1	YES	NV
Lead	Target	28.0		mg/kg	28.0		1	YES	NV
Magnesium	Target	3310		mg/kg	3310		1	YES	NV
Manganese	Target	1200		mg/kg	1200		1	YES	NV
Nickel	Target	22.3		mg/kg	22.3		1	YES	NV
Potassium	Target	1700		mg/kg	1700		1	YES	NV
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	NV
Silver	Target	0.23	J	mg/kg	0.23	J	1	YES	NV
Sodium	Target	47.4	J	mg/kg	47.4	J	1	YES	NV
Thallium	Target	3.5	U	mg/kg	3.5	U	1	YES	NV
Vanadium	Target	40.4		mg/kg	40.4		1	YES	NV
Zinc	Target	194		mg/kg	194		1	YES	NV

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2L

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids: 66.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15500		mg/kg	15500		5	YES	NV
Antimony	Target	1.5	J	mg/kg	1.5	J	5	YES	NV
Arsenic	Target	10.7		mg/kg	10.7		5	YES	NV
Barium	Target	83.2	J	mg/kg	83.2	J	5	YES	NV
Beryllium	Target	0.64	J	mg/kg	0.64	J	5	YES	NV
Cadmium	Target	0.12	J	mg/kg	0.12	J	5	YES	NV
Calcium	Target	4110		mg/kg	4110		5	YES	NV
Chromium	Target	61.9		mg/kg	61.9		5	YES	NV
Cobalt	Target	11.0	J	mg/kg	11.0	J	5	YES	NV
Copper	Target	24.2		mg/kg	24.2		5	YES	NV
Iron	Target	35000		mg/kg	35000		5	YES	NV
Lead	Target	29.6		mg/kg	29.6		5	YES	NV
Magnesium	Target	3440	J	mg/kg	3440	J	5	YES	NV
Manganese	Target	1270		mg/kg	1270		5	YES	NV
Nickel	Target	21.8	J	mg/kg	21.8	J	5	YES	NV
Potassium	Target	1810	J	mg/kg	1810	J	5	YES	NV
Selenium	Target	24.3	U	mg/kg	24.3	U	5	YES	NV
Silver	Target	0.52	J	mg/kg	0.52	J	5	YES	NV
Sodium	Target	37.5	J	mg/kg	37.5	J	5	YES	NV
Thallium	Target	17.3	U	mg/kg	17.3	U	5	YES	NV
Vanadium	Target	41.2		mg/kg	41.2		5	YES	NV
Zinc	Target	191		mg/kg	191		5	YES	NV

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2S	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Spike	0.82		mg/kg	0.82		1	YES	NV

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB2S

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location:

pH:

Sample Date: 02/19/2020

Sample Time: 09:15:00

% Moisture:

% Solids: 66.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	10.9		mg/kg	10.9	*	1	YES	NV
Arsenic	Spike	23.1		mg/kg	23.1		1	YES	NV
Barium	Spike	624		mg/kg	624		1	YES	NV
Beryllium	Spike	14.1		mg/kg	14.1		1	YES	NV
Cadmium	Spike	13.2		mg/kg	13.2		1	YES	NV
Chromium	Spike	124		mg/kg	124		1	YES	NV
Cobalt	Spike	141		mg/kg	141		1	YES	NV
Copper	Spike	88.2		mg/kg	88.2		1	YES	NV
Lead	Spike	34.2		mg/kg	34.2		1	YES	NV
Manganese	Spike	1410		mg/kg	1410		1	YES	NV
Nickel	Spike	163		mg/kg	163		1	YES	NV
Selenium	Spike	23.9		mg/kg	23.9		1	YES	NV
Silver	Spike	13.6		mg/kg	13.6		1	YES	NV
Thallium	Spike	14.0		mg/kg	14.0		1	YES	NV
Vanadium	Spike	186		mg/kg	186		1	YES	NV
Zinc	Spike	358		mg/kg	358		1	YES	NV

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB3

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: P-02

pH:

Sample Date: 02/19/2020

Sample Time: 09:37:00

% Moisture:

% Solids: 77.6

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.12	UJ	mg/kg	0.12	U	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB3

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-02

pH:

Sample Date: 02/19/2020

Sample Time: 09:37:00

% Moisture:

% Solids: 77.6

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400		1	YES	S4VEM
Antimony	Target	7.3	U	mg/kg	1.1	J*	1	YES	S4VEM
Arsenic	Target	18.1		mg/kg	18.1		1	YES	S4VEM
Barium	Target	192		mg/kg	192		1	YES	S4VEM
Beryllium	Target	1.0		mg/kg	1.0		1	YES	S4VEM
Cadmium	Target	0.93		mg/kg	0.93		1	YES	S4VEM
Calcium	Target	8040		mg/kg	8040		1	YES	S4VEM
Chromium	Target	41.9		mg/kg	41.9		1	YES	S4VEM
Cobalt	Target	12.8		mg/kg	12.8		1	YES	S4VEM
Copper	Target	31.7		mg/kg	31.7		1	YES	S4VEM
Iron	Target	34100		mg/kg	34100		1	YES	S4VEM
Lead	Target	246		mg/kg	246		1	YES	S4VEM
Magnesium	Target	4410		mg/kg	4410		1	YES	S4VEM
Manganese	Target	1110		mg/kg	1110		1	YES	S4VEM
Nickel	Target	28.8		mg/kg	28.8		1	YES	S4VEM
Potassium	Target	2150		mg/kg	2150		1	YES	S4VEM
Selenium	Target	4.3	U	mg/kg	4.3	U	1	YES	S4VEM
Silver	Target	1.2	U	mg/kg	0.32	J	1	YES	S4VEM
Sodium	Target	608	U	mg/kg	74.9	J	1	YES	S4VEM
Thallium	Target	3.0	UJ	mg/kg	3.0	U	1	YES	S4VEM
Vanadium	Target	36.5		mg/kg	36.5		1	YES	S4VEM
Zinc	Target	3010		mg/kg	3010		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB4

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: P-03

pH:

Sample Date: 02/19/2020

Sample Time: 10:05:00

% Moisture:

% Solids: 77.5

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.32		mg/kg	0.32		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB4      Method: Metals by ICP-AES      Matrix: Soil      MA Number:  
Sample Location: P-03      pH:      Sample Date: 02/19/2020      Sample Time: 10:05:00  
% Moisture:      % Solids: 77.5

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12900		mg/kg	12900		1	YES	S4VEM
Antimony	Target	7.2	U	mg/kg	5.2	J*	1	YES	S4VEM
Arsenic	Target	20.1		mg/kg	20.1		1	YES	S4VEM
Barium	Target	285		mg/kg	285		1	YES	S4VEM
Beryllium	Target	0.80		mg/kg	0.80		1	YES	S4VEM
Cadmium	Target	2.4		mg/kg	2.4		1	YES	S4VEM
Calcium	Target	19400		mg/kg	19400		1	YES	S4VEM
Chromium	Target	218		mg/kg	218		1	YES	S4VEM
Cobalt	Target	11.2		mg/kg	11.2		1	YES	S4VEM
Copper	Target	204		mg/kg	204		1	YES	S4VEM
Iron	Target	62700		mg/kg	62700	D	5	YES	S4VEM
Lead	Target	382		mg/kg	382		1	YES	S4VEM
Magnesium	Target	5060		mg/kg	5060		1	YES	S4VEM
Manganese	Target	4670		mg/kg	4670	D	5	YES	S4VEM
Nickel	Target	32.2		mg/kg	32.2		1	YES	S4VEM
Potassium	Target	1920		mg/kg	1920		1	YES	S4VEM
Selenium	Target	4.2	U	mg/kg	4.2	U	1	YES	S4VEM
Silver	Target	1.2	U	mg/kg	0.83	J	1	YES	S4VEM
Sodium	Target	597	U	mg/kg	95.3	J	1	YES	S4VEM
Thallium	Target	3.0	UJ	mg/kg	0.43	J	1	YES	S4VEM
Vanadium	Target	96.4		mg/kg	96.4		1	YES	S4VEM
Zinc	Target	1000		mg/kg	1000		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB5

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: P-03

pH:

Sample Date: 02/19/2020

Sample Time: 10:10:00

% Moisture:

% Solids: 80.1

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.25		mg/kg	0.25		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB5

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-03

pH:

Sample Date: 02/19/2020

Sample Time: 10:10:00

Moisture:

% Solids: 80.1

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12400		mg/kg	12400		1	YES	S4VEM
Antimony	Target	6.9	U	mg/kg	4.6	J*	1	YES	S4VEM
Arsenic	Target	20.3		mg/kg	20.3		1	YES	S4VEM
Barium	Target	249		mg/kg	249		1	YES	S4VEM
Beryllium	Target	0.83		mg/kg	0.83		1	YES	S4VEM
Cadmium	Target	2.1		mg/kg	2.1		1	YES	S4VEM
Calcium	Target	13900		mg/kg	13900		1	YES	S4VEM
Chromium	Target	186		mg/kg	186		1	YES	S4VEM
Cobalt	Target	10.6		mg/kg	10.6		1	YES	S4VEM
Copper	Target	210		mg/kg	210		1	YES	S4VEM
Iron	Target	64700		mg/kg	64700	D	3	YES	S4VEM
Lead	Target	361		mg/kg	361		1	YES	S4VEM
Magnesium	Target	4570		mg/kg	4570		1	YES	S4VEM
Manganese	Target	4000		mg/kg	4000	D	3	YES	S4VEM
Nickel	Target	26.7		mg/kg	26.7		1	YES	S4VEM
Potassium	Target	1820		mg/kg	1820		1	YES	S4VEM
Selenium	Target	4.0	U	mg/kg	4.0	U	1	YES	S4VEM
Silver	Target	1.1	U	mg/kg	0.73	J	1	YES	S4VEM
Sodium	Target	573	U	mg/kg	96.7	J	1	YES	S4VEM
Thallium	Target	2.9	UJ	mg/kg	2.9	U	1	YES	S4VEM
Vanadium	Target	87.7		mg/kg	87.7		1	YES	S4VEM
Zinc	Target	927		mg/kg	927		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TRI

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB6

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: P-04

pH:

Sample Date: 02/19/2020

Sample Time: 10:20:00

% Moisture:

% Solids: 68.3

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.31		mg/kg	0.31		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB6

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-04

pH:

Sample Date: 02/19/2020

Sample Time: 10:20:00

% Moisture:

% Solids: 68.3

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14300		mg/kg	14300		1	YES	S4VEM
Antimony	Target	8.4	U	mg/kg	1.9	J*	1	YES	S4VEM
Arsenic	Target	17.1		mg/kg	17.1		1	YES	S4VEM
Barium	Target	236		mg/kg	236		1	YES	S4VEM
Beryllium	Target	1.2		mg/kg	1.2		1	YES	S4VEM
Cadmium	Target	1.4		mg/kg	1.4		1	YES	S4VEM
Calcium	Target	11500		mg/kg	11500		1	YES	S4VEM
Chromium	Target	54.7		mg/kg	54.7		1	YES	S4VEM
Cobalt	Target	11.4		mg/kg	11.4		1	YES	S4VEM
Copper	Target	45.2		mg/kg	45.2		1	YES	S4VEM
Iron	Target	35900		mg/kg	35900		1	YES	S4VEM
Lead	Target	485		mg/kg	485		1	YES	S4VEM
Magnesium	Target	3720		mg/kg	3720		1	YES	S4VEM
Manganese	Target	1460		mg/kg	1460		1	YES	S4VEM
Nickel	Target	22.6		mg/kg	22.6		1	YES	S4VEM
Potassium	Target	2330		mg/kg	2330		1	YES	S4VEM
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.34	J	1	YES	S4VEM
Sodium	Target	704	U	mg/kg	84.2	J	1	YES	S4VEM
Thallium	Target	3.5	UJ	mg/kg	3.5	U	1	YES	S4VEM
Vanadium	Target	38.8		mg/kg	38.8		1	YES	S4VEM
Zinc	Target	682		mg/kg	682		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB7      Method: Mercury by Cold Vapor      Matrix: Soil      MA Number:  
Sample Location: P-05      pH:      Sample Date: 02/19/2020      Sample Time: 10:35:00  
% Moisture:      % Solids: 67.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.13	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TRI

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB7

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-05

pH:

Sample Date: 02/19/2020

Sample Time: 10:35:00

% Moisture:

% Solids: 67.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13200		mg/kg	13200		1	YES	S4VEM
Antimony	Target	8.6	U	mg/kg	1.5	J*	1	YES	S4VEM
Arsenic	Target	11.6		mg/kg	11.6		1	YES	S4VEM
Barium	Target	113		mg/kg	113		1	YES	S4VEM
Beryllium	Target	0.85		mg/kg	0.85		1	YES	S4VEM
Cadmium	Target	0.71	U	mg/kg	0.64	J	1	YES	S4VEM
Calcium	Target	7160		mg/kg	7160		1	YES	S4VEM
Chromium	Target	43.1		mg/kg	43.1		1	YES	S4VEM
Cobalt	Target	8.3		mg/kg	8.3		1	YES	S4VEM
Copper	Target	33.4		mg/kg	33.4		1	YES	S4VEM
Iron	Target	30200		mg/kg	30200		1	YES	S4VEM
Lead	Target	114		mg/kg	114		1	YES	S4VEM
Magnesium	Target	2800		mg/kg	2800		1	YES	S4VEM
Manganese	Target	826		mg/kg	826		1	YES	S4VEM
Nickel	Target	19.9		mg/kg	19.9		1	YES	S4VEM
Potassium	Target	1790		mg/kg	1790		1	YES	S4VEM
Selenium	Target	5.0	U	mg/kg	5.0	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.23	J	1	YES	S4VEM
Sodium	Target	715	U	mg/kg	62.0	J	1	YES	S4VEM
Thallium	Target	3.6	UJ	mg/kg	3.6	U	1	YES	S4VEM
Vanadium	Target	32.5		mg/kg	32.5		1	YES	S4VEM
Zinc	Target	353		mg/kg	353		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB8

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: P-06

pH:

Sample Date: 02/19/2020

Sample Time: 10:50:00

% Moisture:

% Solids: 60.7

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.16	UJ	mg/kg	0.035	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB8

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-06

pH:

Sample Date: 02/19/2020

Sample Time: 10:50:00

% Moisture:

% Solids: 60.7

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16100		mg/kg	16100		1	YES	S4VEM
Antimony	Target	9.6	U	mg/kg	1.1	J*	1	YES	S4VEM
Arsenic	Target	10.0		mg/kg	10.0		1	YES	S4VEM
Barium	Target	107		mg/kg	107		1	YES	S4VEM
Beryllium	Target	1.3		mg/kg	1.3		1	YES	S4VEM
Cadmium	Target	0.80	U	mg/kg	0.18	J	1	YES	S4VEM
Calcium	Target	9090		mg/kg	9090		1	YES	S4VEM
Chromium	Target	44.8		mg/kg	44.8		1	YES	S4VEM
Cobalt	Target	12.4		mg/kg	12.4		1	YES	S4VEM
Copper	Target	28.3		mg/kg	28.3		1	YES	S4VEM
Iron	Target	33300		mg/kg	33300		1	YES	S4VEM
Lead	Target	43.9		mg/kg	43.9		1	YES	S4VEM
Magnesium	Target	4960		mg/kg	4960		1	YES	S4VEM
Manganese	Target	991		mg/kg	991		1	YES	S4VEM
Nickel	Target	33.5		mg/kg	33.5		1	YES	S4VEM
Potassium	Target	2500		mg/kg	2500		1	YES	S4VEM
Selenium	Target	5.6	U	mg/kg	5.6	U	1	YES	S4VEM
Silver	Target	1.6	U	mg/kg	0.13	J	1	YES	S4VEM
Sodium	Target	800	U	mg/kg	83.3	J	1	YES	S4VEM
Thallium	Target	4.0	UJ	mg/kg	4.0	U	1	YES	S4VEM
Vanadium	Target	33.0		mg/kg	33.0		1	YES	S4VEM
Zinc	Target	1110		mg/kg	1110		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB9      Method: Mercury by Cold Vapor      Matrix: Soil      MA Number:  
Sample Location: P-07      pH:      Sample Date: 02/19/2020      Sample Time: 11:15:00  
% Moisture:      % Solids: 68.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.056	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AB9

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-07

pH:

Sample Date: 02/19/2020

Sample Time: 11:15:00

% Moisture:

% Solids: 68.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17600		mg/kg	17600		1	YES	S4VEM
Antimony	Target	8.2	U	mg/kg	0.85	J*	1	YES	S4VEM
Arsenic	Target	8.8		mg/kg	8.8		1	YES	S4VEM
Barium	Target	142		mg/kg	142		1	YES	S4VEM
Beryllium	Target	1.0		mg/kg	1.0		1	YES	S4VEM
Cadmium	Target	0.68	U	mg/kg	0.33	J	1	YES	S4VEM
Calcium	Target	4740		mg/kg	4740		1	YES	S4VEM
Chromium	Target	42.7		mg/kg	42.7		1	YES	S4VEM
Cobalt	Target	12.3		mg/kg	12.3		1	YES	S4VEM
Copper	Target	17.2		mg/kg	17.2		1	YES	S4VEM
Iron	Target	26900		mg/kg	26900		1	YES	S4VEM
Lead	Target	41.1		mg/kg	41.1		1	YES	S4VEM
Magnesium	Target	3070		mg/kg	3070		1	YES	S4VEM
Manganese	Target	1530		mg/kg	1530		1	YES	S4VEM
Nickel	Target	23.3		mg/kg	23.3		1	YES	S4VEM
Potassium	Target	2530		mg/kg	2530		1	YES	S4VEM
Selenium	Target	4.8	U	mg/kg	4.8	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.19	J	1	YES	S4VEM
Sodium	Target	679	U	mg/kg	49.2	J	1	YES	S4VEM
Thallium	Target	3.4	UJ	mg/kg	0.68	J	1	YES	S4VEM
Vanadium	Target	36.7		mg/kg	36.7		1	YES	S4VEM
Zinc	Target	197		mg/kg	197		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC0      Method: Mercury by Cold Vapor      Matrix: Soil      MA Number:  
Sample Location: P-08      pH:      Sample Date: 02/19/2020      Sample Time: 11:50:00  
% Moisture:      % Solids: 51.2

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.30		mg/kg	0.30		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC0

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-08

pH:

Sample Date: 02/19/2020

Sample Time: 11:50:00

% Moisture:

% Solids: 51.2

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16200		mg/kg	16200		1	YES	S4VEM
Antimony	Target	11.2	U	mg/kg	2.3	J*	1	YES	S4VEM
Arsenic	Target	15.7		mg/kg	15.7		1	YES	S4VEM
Barium	Target	121		mg/kg	121		1	YES	S4VEM
Beryllium	Target	0.93	U	mg/kg	0.87	J	1	YES	S4VEM
Cadmium	Target	2.5		mg/kg	2.5		1	YES	S4VEM
Calcium	Target	14200		mg/kg	14200		1	YES	S4VEM
Chromium	Target	66.3		mg/kg	66.3		1	YES	S4VEM
Cobalt	Target	13.0		mg/kg	13.0		1	YES	S4VEM
Copper	Target	54.1		mg/kg	54.1		1	YES	S4VEM
Iron	Target	45100		mg/kg	45100		1	YES	S4VEM
Lead	Target	189		mg/kg	189		1	YES	S4VEM
Magnesium	Target	4450		mg/kg	4450		1	YES	S4VEM
Manganese	Target	2120		mg/kg	2120		1	YES	S4VEM
Nickel	Target	30.0		mg/kg	30.0		1	YES	S4VEM
Potassium	Target	3190		mg/kg	3190		1	YES	S4VEM
Selenium	Target	6.5	U	mg/kg	6.5	U	1	YES	S4VEM
Silver	Target	1.9	U	mg/kg	0.51	J	1	YES	S4VEM
Sodium	Target	930	U	mg/kg	92.8	J	1	YES	S4VEM
Thallium	Target	4.7	UJ	mg/kg	4.7	U	1	YES	S4VEM
Vanadium	Target	43.8		mg/kg	43.8		1	YES	S4VEM
Zinc	Target	962		mg/kg	962		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TRI

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC1	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-09	pH:	Sample Date: 02/19/2020	Sample Time: 11:55:00
% Moisture:		% Solids: 72.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.25		mg/kg	0.25		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC1

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-09

pH:

Sample Date: 02/19/2020

Sample Time: 11:55:00

% Moisture:

% Solids: 72.1

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14800		mg/kg	14800		1	YES	S4VEM
Antimony	Target	7.6	U	mg/kg	1.9	J*	1	YES	S4VEM
Arsenic	Target	17.3		mg/kg	17.3		1	YES	S4VEM
Barium	Target	138		mg/kg	138		1	YES	S4VEM
Beryllium	Target	0.88		mg/kg	0.88		1	YES	S4VEM
Cadmium	Target	0.98		mg/kg	0.98		1	YES	S4VEM
Calcium	Target	5820		mg/kg	5820		1	YES	S4VEM
Chromium	Target	57.7		mg/kg	57.7		1	YES	S4VEM
Cobalt	Target	12.1		mg/kg	12.1		1	YES	S4VEM
Copper	Target	36.3		mg/kg	36.3		1	YES	S4VEM
Iron	Target	44400		mg/kg	44400		1	YES	S4VEM
Lead	Target	144		mg/kg	144		1	YES	S4VEM
Magnesium	Target	3460		mg/kg	3460		1	YES	S4VEM
Manganese	Target	1370		mg/kg	1370		1	YES	S4VEM
Nickel	Target	24.1		mg/kg	24.1		1	YES	S4VEM
Potassium	Target	2000		mg/kg	2000		1	YES	S4VEM
Selenium	Target	4.5	U	mg/kg	4.5	U	1	YES	S4VEM
Silver	Target	1.3	U	mg/kg	0.50	J	1	YES	S4VEM
Sodium	Target	636	U	mg/kg	56.7	J	1	YES	S4VEM
Thallium	Target	3.2	UJ	mg/kg	3.2	U	1	YES	S4VEM
Vanadium	Target	38.9		mg/kg	38.9		1	YES	S4VEM
Zinc	Target	463		mg/kg	463		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC2

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: P-10

pH:

Sample Date: 02/19/2020

Sample Time: 12:20:00

% Moisture:

% Solids: 71.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14		mg/kg	0.14		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC2

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-10

pH:

Sample Date: 02/19/2020

Sample Time: 12:20:00

% Moisture:

% Solids: 71.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16800		mg/kg	16800		1	YES	S4VEM
Antimony	Target	8.3	U	mg/kg	2.6	J*	1	YES	S4VEM
Arsenic	Target	17.3		mg/kg	17.3		1	YES	S4VEM
Barium	Target	188		mg/kg	188		1	YES	S4VEM
Beryllium	Target	0.95		mg/kg	0.95		1	YES	S4VEM
Cadmium	Target	1.6		mg/kg	1.6		1	YES	S4VEM
Calcium	Target	5830		mg/kg	5830		1	YES	S4VEM
Chromium	Target	94.3		mg/kg	94.3		1	YES	S4VEM
Cobalt	Target	13.0		mg/kg	13.0		1	YES	S4VEM
Copper	Target	38.2		mg/kg	38.2		1	YES	S4VEM
Iron	Target	44300		mg/kg	44300		1	YES	S4VEM
Lead	Target	221		mg/kg	221		1	YES	S4VEM
Magnesium	Target	3710		mg/kg	3710		1	YES	S4VEM
Manganese	Target	2340		mg/kg	2340	D	2	YES	S4VEM
Nickel	Target	26.0		mg/kg	26.0		1	YES	S4VEM
Potassium	Target	2590		mg/kg	2590		1	YES	S4VEM
Selenium	Target	4.8	U	mg/kg	4.8	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.43	J	1	YES	S4VEM
Sodium	Target	689	U	mg/kg	60.2	J	1	YES	S4VEM
Thallium	Target	3.4	UJ	mg/kg	0.29	J	1	YES	S4VEM
Vanadium	Target	54.4		mg/kg	54.4		1	YES	S4VEM
Zinc	Target	691		mg/kg	691		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC3      Method: Mercury by Cold Vapor      Matrix: Soil      MA Number:  
Sample Location: P-11      pH:      Sample Date: 02/19/2020      Sample Time: 13:25:00  
% Moisture:      % Solids: 76.1

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14		mg/kg	0.14		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC3

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-11

pH:

Sample Date: 02/19/2020

Sample Time: 13:25:00

% Moisture:

% Solids: 76.1

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13600		mg/kg	13600		1	YES	S4VEM
Antimony	Target	7.7	U	mg/kg	2.1	J*	1	YES	S4VEM
Arsenic	Target	18.4		mg/kg	18.4		1	YES	S4VEM
Barium	Target	138		mg/kg	138		1	YES	S4VEM
Beryllium	Target	0.81		mg/kg	0.81		1	YES	S4VEM
Cadmium	Target	1.1		mg/kg	1.1		1	YES	S4VEM
Calcium	Target	4840		mg/kg	4840		1	YES	S4VEM
Chromium	Target	63.1		mg/kg	63.1		1	YES	S4VEM
Cobalt	Target	10.8		mg/kg	10.8		1	YES	S4VEM
Copper	Target	38.7		mg/kg	38.7		1	YES	S4VEM
Iron	Target	38500		mg/kg	38500		1	YES	S4VEM
Lead	Target	145		mg/kg	145		1	YES	S4VEM
Magnesium	Target	2990		mg/kg	2990		1	YES	S4VEM
Manganese	Target	1420		mg/kg	1420		1	YES	S4VEM
Nickel	Target	22.3		mg/kg	22.3		1	YES	S4VEM
Potassium	Target	1610		mg/kg	1610		1	YES	S4VEM
Selenium	Target	4.5	U	mg/kg	4.5	U	1	YES	S4VEM
Silver	Target	1.3	U	mg/kg	0.27	J	1	YES	S4VEM
Sodium	Target	638	U	mg/kg	51.2	J	1	YES	S4VEM
Thallium	Target	3.2	UJ	mg/kg	3.2	U	1	YES	S4VEM
Vanadium	Target	41.5		mg/kg	41.5		1	YES	S4VEM
Zinc	Target	469		mg/kg	469		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC4	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-12	pH:	Sample Date: 02/19/2020	Sample Time: 13:30:00
% Moisture:		% Solids: 70.3	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.13	UJ	mg/kg	0.031	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC4

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-12

pH:

Sample Date: 02/19/2020

Sample Time: 13:30:00

% Moisture:

% Solids: 70.3

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12600		mg/kg	12600		1	YES	S4VEM
Antimony	Target	8.5	U	mg/kg	1.1	J*	1	YES	S4VEM
Arsenic	Target	11.5		mg/kg	11.5		1	YES	S4VEM
Barium	Target	63.6		mg/kg	63.6		1	YES	S4VEM
Beryllium	Target	0.71	U	mg/kg	0.58	J	1	YES	S4VEM
Cadmium	Target	0.71	U	mg/kg	0.059	J	1	YES	S4VEM
Calcium	Target	3300		mg/kg	3300		1	YES	S4VEM
Chromium	Target	30.9		mg/kg	30.9		1	YES	S4VEM
Cobalt	Target	8.6		mg/kg	8.6		1	YES	S4VEM
Copper	Target	21.1		mg/kg	21.1		1	YES	S4VEM
Iron	Target	25400		mg/kg	25400		1	YES	S4VEM
Lead	Target	39.5		mg/kg	39.5		1	YES	S4VEM
Magnesium	Target	2370		mg/kg	2370		1	YES	S4VEM
Manganese	Target	619		mg/kg	619		1	YES	S4VEM
Nickel	Target	17.4		mg/kg	17.4		1	YES	S4VEM
Potassium	Target	1530		mg/kg	1530		1	YES	S4VEM
Selenium	Target	5.0	U	mg/kg	5.0	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	1.4	U	1	YES	S4VEM
Sodium	Target	711	U	mg/kg	61.5	J	1	YES	S4VEM
Thallium	Target	3.6	UJ	mg/kg	3.6	U	1	YES	S4VEM
Vanadium	Target	31.2		mg/kg	31.2		1	YES	S4VEM
Zinc	Target	136		mg/kg	136		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC5	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-12	pH:	Sample Date: 02/19/2020	Sample Time: 13:40:00
% Moisture:		% Solids: 70.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.033	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC5

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-12

pH:

Sample Date: 02/19/2020

Sample Time: 13:40:00

% Moisture:

% Solids: 70.2

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	11900		mg/kg	11900		1	YES	S4VEM
Antimony	Target	8.4	U	mg/kg	0.98	J*	1	YES	S4VEM
Arsenic	Target	10.5		mg/kg	10.5		1	YES	S4VEM
Barium	Target	60.1		mg/kg	60.1		1	YES	S4VEM
Beryllium	Target	0.70	U	mg/kg	0.54	J	1	YES	S4VEM
Cadmium	Target	0.70	U	mg/kg	0.11	J	1	YES	S4VEM
Calcium	Target	3420		mg/kg	3420		1	YES	S4VEM
Chromium	Target	29.8		mg/kg	29.8		1	YES	S4VEM
Cobalt	Target	7.9		mg/kg	7.9		1	YES	S4VEM
Copper	Target	20.6		mg/kg	20.6		1	YES	S4VEM
Iron	Target	24000		mg/kg	24000		1	YES	S4VEM
Lead	Target	41.2		mg/kg	41.2		1	YES	S4VEM
Magnesium	Target	2300		mg/kg	2300		1	YES	S4VEM
Manganese	Target	580		mg/kg	580		1	YES	S4VEM
Nickel	Target	16.2		mg/kg	16.2		1	YES	S4VEM
Potassium	Target	1460		mg/kg	1460		1	YES	S4VEM
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	1.4	U	1	YES	S4VEM
Sodium	Target	698	U	mg/kg	60.2	J	1	YES	S4VEM
Thallium	Target	3.5	UJ	mg/kg	3.5	U	1	YES	S4VEM
Vanadium	Target	29.6		mg/kg	29.6		1	YES	S4VEM
Zinc	Target	152		mg/kg	152		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC6	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-13	pH:	Sample Date: 02/19/2020	Sample Time: 14:07:00
% Moisture:		% Solids: 76.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.12	UJ	mg/kg	0.028	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TRI

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC6

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-13

pH:

Sample Date: 02/19/2020

Sample Time: 14:07:00

% Moisture:

% Solids: 76.8

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	10700		mg/kg	10700		1	YES	S4VEM
Antimony	Target	7.4	U	mg/kg	1.3	J*	1	YES	S4VEM
Arsenic	Target	12.8		mg/kg	12.8		1	YES	S4VEM
Barium	Target	57.0		mg/kg	57.0		1	YES	S4VEM
Beryllium	Target	0.61	U	mg/kg	0.52	J	1	YES	S4VEM
Cadmium	Target	0.61	U	mg/kg	0.14	J	1	YES	S4VEM
Calcium	Target	2900		mg/kg	2900		1	YES	S4VEM
Chromium	Target	37.4		mg/kg	37.4		1	YES	S4VEM
Cobalt	Target	7.5		mg/kg	7.5		1	YES	S4VEM
Copper	Target	21.3		mg/kg	21.3		1	YES	S4VEM
Iron	Target	24600		mg/kg	24600		1	YES	S4VEM
Lead	Target	41.4		mg/kg	41.4		1	YES	S4VEM
Magnesium	Target	2220		mg/kg	2220		1	YES	S4VEM
Manganese	Target	953		mg/kg	953		1	YES	S4VEM
Nickel	Target	15.5		mg/kg	15.5		1	YES	S4VEM
Potassium	Target	1200		mg/kg	1200		1	YES	S4VEM
Selenium	Target	4.3	U	mg/kg	4.3	U	1	YES	S4VEM
Silver	Target	1.2	U	mg/kg	0.14	J	1	YES	S4VEM
Sodium	Target	614	U	mg/kg	32.3	J	1	YES	S4VEM
Thallium	Target	3.1	UJ	mg/kg	3.1	U	1	YES	S4VEM
Vanadium	Target	30.0		mg/kg	30.0		1	YES	S4VEM
Zinc	Target	180		mg/kg	180		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC7	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-14	pH:	Sample Date: 02/19/2020	Sample Time: 14:23:00
% Moisture:		% Solids: 76.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14		mg/kg	0.14		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC7

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: P-14

pH:

Sample Date: 02/19/2020

Sample Time: 14:23:00

% Moisture:

% Solids: 76.0

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12000		mg/kg	12000		1	YES	S4VEM
Antimony	Target	7.5	U	mg/kg	1.2	J*	1	YES	S4VEM
Arsenic	Target	14.1		mg/kg	14.1		1	YES	S4VEM
Barium	Target	154		mg/kg	154		1	YES	S4VEM
Beryllium	Target	0.95		mg/kg	0.95		1	YES	S4VEM
Cadmium	Target	0.63	U	mg/kg	0.27	J	1	YES	S4VEM
Calcium	Target	8170		mg/kg	8170		1	YES	S4VEM
Chromium	Target	37.5		mg/kg	37.5		1	YES	S4VEM
Cobalt	Target	13.3		mg/kg	13.3		1	YES	S4VEM
Copper	Target	45.3		mg/kg	45.3		1	YES	S4VEM
Iron	Target	34700		mg/kg	34700		1	YES	S4VEM
Lead	Target	30.9		mg/kg	30.9		1	YES	S4VEM
Magnesium	Target	3470		mg/kg	3470		1	YES	S4VEM
Manganese	Target	1160		mg/kg	1160		1	YES	S4VEM
Nickel	Target	28.7		mg/kg	28.7		1	YES	S4VEM
Potassium	Target	2030		mg/kg	2030		1	YES	S4VEM
Selenium	Target	4.4	U	mg/kg	4.4	U	1	YES	S4VEM
Silver	Target	3.0		mg/kg	3.0		1	YES	S4VEM
Sodium	Target	627	U	mg/kg	78.6	J	1	YES	S4VEM
Thallium	Target	3.1	UJ	mg/kg	3.1	U	1	YES	S4VEM
Vanadium	Target	28.7		mg/kg	28.7		1	YES	S4VEM
Zinc	Target	150		mg/kg	150		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC8

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: B-15

pH:

Sample Date: 02/19/2020

Sample Time: 14:45:00

% Moisture:

% Solids: 65.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.15	UJ	mg/kg	0.057	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC8

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: B-15

pH:

Sample Date: 02/19/2020

Sample Time: 14:45:00

% Moisture:

% Solids: 65.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15600		mg/kg	15600		1	YES	S4VEM
Antimony	Target	8.8	U	mg/kg	2.6	J*	1	YES	S4VEM
Arsenic	Target	18.2		mg/kg	18.2		1	YES	S4VEM
Barium	Target	168		mg/kg	168		1	YES	S4VEM
Beryllium	Target	3.0		mg/kg	3.0		1	YES	S4VEM
Cadmium	Target	1.8		mg/kg	1.8		1	YES	S4VEM
Calcium	Target	44500		mg/kg	44500		1	YES	S4VEM
Chromium	Target	71.3		mg/kg	71.3		1	YES	S4VEM
Cobalt	Target	7.4	U	mg/kg	7.1	J	1	YES	S4VEM
Copper	Target	38.6		mg/kg	38.6		1	YES	S4VEM
Iron	Target	63500		mg/kg	63500	D	2	YES	S4VEM
Lead	Target	136		mg/kg	136		1	YES	S4VEM
Magnesium	Target	16000		mg/kg	16000		1	YES	S4VEM
Manganese	Target	1990		mg/kg	1990		1	YES	S4VEM
Nickel	Target	19.4		mg/kg	19.4		1	YES	S4VEM
Potassium	Target	1960		mg/kg	1960		1	YES	S4VEM
Selenium	Target	5.2	U	mg/kg	5.2	U	1	YES	S4VEM
Silver	Target	1.5	U	mg/kg	0.49	J	1	YES	S4VEM
Sodium	Target	737	U	mg/kg	288	J	1	YES	S4VEM
Thallium	Target	3.7	UJ	mg/kg	3.7	U	1	YES	S4VEM
Vanadium	Target	42.9		mg/kg	42.9		1	YES	S4VEM
Zinc	Target	635		mg/kg	635		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC9

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: B-16

pH:

Sample Date: 02/19/2020

Sample Time: 15:10:00

% Moisture:

% Solids: 78.2

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.16		mg/kg	0.16		1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AC9

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: B-16

pH:

Sample Date: 02/19/2020

Sample Time: 15:10:00

% Moisture:

% Solids: 78.2

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17000		mg/kg	17000		1	YES	S4VEM
Antimony	Target	7.7	U	mg/kg	1.7	J*	1	YES	S4VEM
Arsenic	Target	21.3		mg/kg	21.3		1	YES	S4VEM
Barium	Target	269		mg/kg	269		1	YES	S4VEM
Beryllium	Target	2.5		mg/kg	2.5		1	YES	S4VEM
Cadmium	Target	0.64	U	mg/kg	0.52	J	1	YES	S4VEM
Calcium	Target	36200		mg/kg	36200		1	YES	S4VEM
Chromium	Target	43.9		mg/kg	43.9		1	YES	S4VEM
Cobalt	Target	6.8		mg/kg	6.8		1	YES	S4VEM
Copper	Target	25.1		mg/kg	25.1		1	YES	S4VEM
Iron	Target	44700		mg/kg	44700		1	YES	S4VEM
Lead	Target	129		mg/kg	129		1	YES	S4VEM
Magnesium	Target	10700		mg/kg	10700		1	YES	S4VEM
Manganese	Target	5510		mg/kg	5510	D	3	YES	S4VEM
Nickel	Target	21.4		mg/kg	21.4		1	YES	S4VEM
Potassium	Target	1550		mg/kg	1550		1	YES	S4VEM
Selenium	Target	4.5	U	mg/kg	4.5	U	1	YES	S4VEM
Silver	Target	1.3	U	mg/kg	0.37	J	1	YES	S4VEM
Sodium	Target	639	U	mg/kg	282	J	1	YES	S4VEM
Thallium	Target	3.2	UJ	mg/kg	3.0	J	1	YES	S4VEM
Vanadium	Target	47.5		mg/kg	47.5		1	YES	S4VEM
Zinc	Target	575		mg/kg	575		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AD0

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location: B-17

pH:

Sample Date: 02/19/2020

Sample Time: 15:35:00

% Moisture:

% Solids: 60.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.16	UJ	mg/kg	0.11	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AD0

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location: B-17

pH:

Sample Date: 02/19/2020

Sample Time: 15:35:00

% Moisture:

% Solids: 60.9

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15900		mg/kg	15900		1	YES	S4VEM
Antimony	Target	9.5	U	mg/kg	2.9	J*	1	YES	S4VEM
Arsenic	Target	43.9		mg/kg	43.9		1	YES	S4VEM
Barium	Target	142		mg/kg	142		1	YES	S4VEM
Beryllium	Target	1.9		mg/kg	1.9		1	YES	S4VEM
Cadmium	Target	0.92		mg/kg	0.92		1	YES	S4VEM
Calcium	Target	13600		mg/kg	13600		1	YES	S4VEM
Chromium	Target	76.3		mg/kg	76.3		1	YES	S4VEM
Cobalt	Target	9.0		mg/kg	9.0		1	YES	S4VEM
Copper	Target	64.1		mg/kg	64.1		1	YES	S4VEM
Iron	Target	58500		mg/kg	58500	D	2	YES	S4VEM
Lead	Target	151		mg/kg	151		1	YES	S4VEM
Magnesium	Target	4420		mg/kg	4420		1	YES	S4VEM
Manganese	Target	1870		mg/kg	1870		1	YES	S4VEM
Nickel	Target	21.4		mg/kg	21.4		1	YES	S4VEM
Potassium	Target	1470		mg/kg	1470		1	YES	S4VEM
Selenium	Target	5.5	U	mg/kg	5.5	U	1	YES	S4VEM
Silver	Target	1.6	U	mg/kg	0.53	J	1	YES	S4VEM
Sodium	Target	789	U	mg/kg	149	J	1	YES	S4VEM
Thallium	Target	3.9	UJ	mg/kg	3.9	U	1	YES	S4VEM
Vanadium	Target	58.9		mg/kg	58.9		1	YES	S4VEM
Zinc	Target	447		mg/kg	447		1	YES	S4VEM

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TRI

Lab Name: Bonner Analytical Testing Co.

Sample Number: PBS01

Method: Mercury by Cold Vapor

Matrix: Soil

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids: 100

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.10	U	mg/kg	0.10	U	1	YES	NV

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.

Sample Number: PBS01

Method: Metals by ICP-AES

Matrix: Soil

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids: 100

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	11.7	J	mg/kg	11.7	J	1	YES	NV
Antimony	Target	0.27	J	mg/kg	0.27	J	1	YES	NV
Arsenic	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Barium	Target	0.41	J	mg/kg	0.41	J	1	YES	NV
Beryllium	Target	0.50	U	mg/kg	0.50	U	1	YES	NV
Cadmium	Target	0.50	U	mg/kg	0.50	U	1	YES	NV
Calcium	Target	19.2	J	mg/kg	19.2	J	1	YES	NV
Chromium	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Cobalt	Target	5.0	U	mg/kg	5.0	U	1	YES	NV
Copper	Target	0.49	J	mg/kg	0.49	J	1	YES	NV
Iron	Target	5.0	J	mg/kg	5.0	J	1	YES	NV
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Magnesium	Target	12.1	J	mg/kg	12.1	J	1	YES	NV
Manganese	Target	0.26	J	mg/kg	0.26	J	1	YES	NV
Nickel	Target	4.0	U	mg/kg	4.0	U	1	YES	NV
Potassium	Target	5.0	J	mg/kg	5.0	J	1	YES	NV
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	NV
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Sodium	Target	5.7	J	mg/kg	5.7	J	1	YES	NV
Thallium	Target	-0.33	J	mg/kg	-0.33	J	1	YES	NV
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	NV
Zinc	Target	6.0	U	mg/kg	6.0	U	1	YES	NV

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR1

Lab Name: Bonner Analytical Testing Co.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
Environmental Sciences Center  
701 Mapes Road  
Fort Meade, Maryland 20755-5350

DATE: 5/5/2020

SUBJECT: Region III Data QA Review

FROM: Eric Graybill  
Region III ESAT RPO (3LS20)

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

TO: DEBORAH LINDSEY  
Hazardous Site Cleanup Division (HSCD)

Attached is the data validation report for the WEIRTON BOP IMPLOSION SITE site for RAS# 48747; SDG# MC8TR2 completed by the Region III Environmental Services Assistance Team (ESAT) contractor, ICF International, under the direction of Region III LSASD.

If you have any questions regarding this review, please call Eric Graybill at (410)-305-2665.

Attachment

cc:

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

TO: #0002 TDF: #0320060





ICF  
ESAT Region 3  
US Environmental Protection Agency Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Phone 410-305-3012

**Date:** May 1, 2020  
**To:** ESAT Region 3 Project Officer  
**From:** [Redacted]  
Validator  
[Redacted]  
Reviewer  
**Subject:** Inorganic Data Validation (S4VEM)  
Weirton BOP Implosion  
48747, MC8TR2

### **Overview**

This data package consisted of one (1) rinsate blank analyzed for total metals by ICP-AES and mercury by cold vapor atomic absorption technique

Analysis was performed by Bonner Analytical Testing Company (BON) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ISM02.4.

Data were validated according to the National Functional Guidelines for Inorganic Superfund Methods Data Review and applicable USEPA Region 3 modifications. Electronic validation was performed by the Electronic Data eXchange & Evaluation System (EXES). The validation report has been assigned the Superfund Data Validation Label Stage\_3\_Validation\_Electronic\_Manual (S3VEM).

The following validation narrative is an evaluation of laboratory reported data based on the electronic data package available through the EXES Data Manager dated March 13, 2020.

### **Summary**

No data quality outliers or technical deficiencies were identified that would require rejection of sample results. A blank contamination issue resulted in estimated sample result for mercury.

### **Minor Problem**

Laboratory instrumentation reported negative values for mercury (Hg) greater than absolute value of the Method Detection Limit (MDL) in blank analyses. No positive result was reported for Hg. The quantitation limit for Hg in sample MC0AD1 is estimated and qualified "UJ".

### **Notes**

No analytes below the Contract Required Quantitation Limits (CRQLs) were detected in this sample.

Aluminum (Al), calcium (Ca), copper (Cu), silver (Ag), thallium (Tl) and zinc (Zn) have been detected in laboratory blanks associated with the sample in this SDG. Concentrations of these analytes which were less than the CRQL have been reported at the CRQL and qualified "U".

Sample number MC0AD1 was previously used by the laboratory in their LIMS as an SDG number. Per the Region, the SDG number for this case was changed to MC8TR2.

As this sample is a field quality control sample, matrix spike, laboratory duplicate, and serial dilution analyses were not performed. No data were qualified based on this finding.

Sample calculation checks were performed for all analytes in sample MC0AD1. All calculated results had RPDs less than 5% of the reported results. No sample data were qualified.

Validation qualifiers are only applied by the validator to field samples. Qualifiers may be applied by EXES electronic validation to laboratory quality control samples.

### **Glossary of Inorganic Data Qualifier Codes**

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Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
-----------------------	--

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- |    |   |
|----|---|
| R  | The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample. |
| UJ | The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.                          |
| U  | The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit  |
| B  | The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.   |
| J  | The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.                              |
| J+ | The result is an estimated quantity, but the result may be biased high.   |
| J- | The result is an estimated quantity, but the result may be biased low.  |

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR2

Lab Name: Bonner Analytical Testing Co.

Sample Number: LCS01

Method: Metals by ICP-AES

Matrix: Water

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	417		ug/L	417		1	YES	NV
Antimony	Spike	122		ug/L	122		1	YES	NV
Arsenic	Spike	20.3		ug/L	20.3		1	YES	NV
Barium	Spike	377		ug/L	377		1	YES	NV
Beryllium	Spike	9.9		ug/L	9.9		1	YES	NV
Cadmium	Spike	11.2		ug/L	11.2		1	YES	NV
Calcium	Spike	10200		ug/L	10200		1	YES	NV
Chromium	Spike	22.8		ug/L	22.8		1	YES	NV
Cobalt	Spike	109		ug/L	109		1	YES	NV
Copper	Spike	51.8		ug/L	51.8		1	YES	NV
Iron	Spike	213		ug/L	213		1	YES	NV
Lead	Spike	20.4		ug/L	20.4		1	YES	NV
Magnesium	Spike	10200		ug/L	10200		1	YES	NV
Manganese	Spike	32.4		ug/L	32.4		1	YES	NV
Nickel	Spike	78.6		ug/L	78.6		1	YES	NV
Potassium	Spike	9840		ug/L	9840		1	YES	NV
Selenium	Spike	77.2		ug/L	77.2		1	YES	NV
Silver	Spike	21.9		ug/L	21.9		1	YES	NV
Sodium	Spike	9840		ug/L	9840		1	YES	NV
Thallium	Spike	53.3		ug/L	53.3		1	YES	NV
Vanadium	Spike	110		ug/L	110		1	YES	NV
Zinc	Spike	123		ug/L	123		1	YES	NV

## Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR2

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AD1

Method: Mercury by Cold Vapor

Matrix: Water

MA Number:

Sample Location: Z

pH: 1.

Sample Date: 02/19/2020

Sample Time: 07:30:00

% Moisture:

% Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.20	UJ	ug/L	0.20	U	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR2

Lab Name: Bonner Analytical Testing Co.

Sample Number: MC0AD1

Method: Metals by ICP-AES

Matrix: Water

MA Number:

Sample Location: Z

pH: 1.

Sample Date: 02/19/2020

Sample Time: 07:30:00

% Moisture:

% Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	200	U	ug/L	10.5	J	1	YES	S4VEM
Antimony	Target	60.0	U	ug/L	60.0	U	1	YES	S4VEM
Arsenic	Target	10.0	U	ug/L	10.0	U	1	YES	S4VEM
Barium	Target	200	U	ug/L	200	U	1	YES	S4VEM
Beryllium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Cadmium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Calcium	Target	5000	U	ug/L	38.2	J	1	YES	S4VEM
Chromium	Target	10.0	U	ug/L	10.0	U	1	YES	S4VEM
Cobalt	Target	50.0	U	ug/L	50.0	U	1	YES	S4VEM
Copper	Target	25.0	U	ug/L	1.7	J	1	YES	S4VEM
Iron	Target	100	U	ug/L	100	U	1	YES	S4VEM
Lead	Target	10.0	U	ug/L	10.0	U	1	YES	S4VEM
Magnesium	Target	5000	U	ug/L	5000	U	1	YES	S4VEM
Manganese	Target	15.0	U	ug/L	15.0	U	1	YES	S4VEM
Nickel	Target	40.0	U	ug/L	40.0	U	1	YES	S4VEM
Potassium	Target	5000	U	ug/L	5000	U	1	YES	S4VEM
Selenium	Target	35.0	U	ug/L	35.0	U	1	YES	S4VEM
Silver	Target	10.0	U	ug/L	1.7	J	1	YES	S4VEM
Sodium	Target	5000	U	ug/L	5000	U	1	YES	S4VEM
Thallium	Target	25.0	U	ug/L	2.2	J	1	YES	S4VEM
Vanadium	Target	50.0	U	ug/L	50.0	U	1	YES	S4VEM
Zinc	Target	60.0	U	ug/L	0.75	J	1	YES	S4VEM

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR2

Lab Name: Bonner Analytical Testing Co.

Sample Number: PBW01

Method: Mercury by Cold Vapor

Matrix: Water

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.20	U	ug/L	0.20	U	1	YES	NV

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR2

Lab Name: Bonner Analytical Testing Co.

Sample Number: PBW01

Method: Metals by ICP-AES

Matrix: Water

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	10.9	J	ug/L	10.9	J	1	YES	NV
Antimony	Target	60.0	U	ug/L	60.0	U	1	YES	NV
Arsenic	Target	10.0	U	ug/L	10.0	U	1	YES	NV
Barium	Target	0.67	J	ug/L	0.67	J	1	YES	NV
Beryllium	Target	5.0	U	ug/L	5.0	U	1	YES	NV
Cadmium	Target	5.0	U	ug/L	5.0	U	1	YES	NV
Calcium	Target	5000	U	ug/L	5000	U	1	YES	NV
Chromium	Target	0.66	J	ug/L	0.66	J	1	YES	NV
Cobalt	Target	0.31	J	ug/L	0.31	J	1	YES	NV
Copper	Target	2.4	J	ug/L	2.4	J	1	YES	NV
Iron	Target	9.3	J	ug/L	9.3	J	1	YES	NV
Lead	Target	10.0	U	ug/L	10.0	U	1	YES	NV
Magnesium	Target	5000	U	ug/L	5000	U	1	YES	NV
Manganese	Target	0.72	J	ug/L	0.72	J	1	YES	NV
Nickel	Target	40.0	U	ug/L	40.0	U	1	YES	NV
Potassium	Target	5000	U	ug/L	5000	U	1	YES	NV
Selenium	Target	35.0	U	ug/L	35.0	U	1	YES	NV
Silver	Target	1.8	J	ug/L	1.8	J	1	YES	NV
Sodium	Target	5000	U	ug/L	5000	U	1	YES	NV
Thallium	Target	25.0	U	ug/L	25.0	U	1	YES	NV
Vanadium	Target	50.0	U	ug/L	50.0	U	1	YES	NV
Zinc	Target	1.6	J	ug/L	1.6	J	1	YES	NV

# Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE  
Project

GroupID: 48747/EPW14029/MC8TR2

Lab Name: Bonner Analytical Testing Co.

TechLaw, Inc.  
START 5 Region III  
EP-S3-15-03

Weirton BOP Implosion Site  
Removal Assessment Trip Report  
Revision: Final  
June 30, 2020

**ATTACHMENT 3**

**FINAL DATA REPORT**  
**HEXAVALENT CHROMIUM**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



**Final Analytical Report**

Site Name..... WEIRTON BOP IMPLOSION SITE

Sample Collection Date(s)..... 2/19/2020 - 2/19/2020

Contact..... Debbie Lindsey

Report Date..... 04/15/2020 14:30

Project #..... DAS R35756

Work Order..... 2002010

**Analyses included in this report:**

Hexavalent Chromium IC by EPA 218.6 (ESAT) .

Percent Dry Weight (105C) by USGS

Approved for Release

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

Region III Laboratory Representative



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

**Report Narrative**

**Aqueous Hexavalent Chromium Analysis Note:**

This report contains the results for dissolved hexavalent chromium in water by EPA Method 218.6. This report provides reporting units in ug/L.

**Solid Hexavalent Chromium Analysis Note:**

Soil samples were analyzed following the On-Demand protocols specified in the EPA Region III LSASD Laboratory Quality Manual and section 6.12 of SOP R3QA069-012320. The samples were digested using SW-846 Method 3060A and analyzed by EPA Method 218.6. This report provides reporting units in ug/g. Slight rounding errors will occur in the Electronic Data Deliverable (EDD).

The soluble and insoluble matrix spikes (BB02604-MS1, BB02604-MS2, BB02604-MS3 and BB02604-MS4) of QC source samples 2002010-01 and 2002010-11 yielded recoveries outside the acceptance limit (< 75%); however, the associated post digestion spikes passed. The pH and Oxidation Reduction Potential of samples 2002010-01 and 2002010-11 were measured and the results indicated that the samples could support hexavalent chromium. Samples 2002010-01, 2002010-11 and associated QCs were re-digested and re-analyzed, however matrix spike recoveries were comparable to the initial analysis. Hexavalent chromium was not detected at or above the quantitation limits in samples 2002010-01 and 2002010-11; therefore, the quantitation limits are qualified as estimated (UJ).

The results for QC source sample 2002010-11 and its associated duplicate sample (BB02604-DUP2) are below the quantitation limit (0.57 ug/g) and the RPD is artificially high (49%). Therefore, the RPD value is qualified as having no significance for this QC data (D).

2002010 Final Report DAS R35756 04 15 20 1430



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: **WEIRTON BOP IMPLOSION SITE**

Project #: **DAS R35756**

## ANALYTICAL REPORT FOR SAMPLES

Station ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-01	2002010-01	Soil	02/19/2020 9:15	02/21/2020 10:30
SS-02	2002010-02	Soil	02/19/2020 9:37	02/21/2020 10:30
SS-03	2002010-03	Soil	02/19/2020 10:05	02/21/2020 10:30
SS-04	2002010-04	Soil	02/19/2020 10:10	02/21/2020 10:30
SS-05	2002010-05	Soil	02/19/2020 10:20	02/21/2020 10:30
SS-06	2002010-06	Soil	02/19/2020 10:35	02/21/2020 10:30
SS-07	2002010-07	Soil	02/19/2020 10:50	02/21/2020 10:30
SS-08	2002010-08	Soil	02/19/2020 11:15	02/21/2020 10:30
SS-09	2002010-09	Soil	02/19/2020 11:50	02/21/2020 10:30
SS-10	2002010-10	Soil	02/19/2020 11:55	02/21/2020 10:30
SS-11	2002010-11	Soil	02/19/2020 12:20	02/21/2020 10:30
SS-12	2002010-12	Soil	02/19/2020 13:25	02/21/2020 10:30
SS-13	2002010-13	Soil	02/19/2020 13:30	02/21/2020 10:30
SS-14	2002010-14	Soil	02/19/2020 13:40	02/21/2020 10:30
SS-15	2002010-15	Soil	02/19/2020 14:07	02/21/2020 10:30
SS-16	2002010-16	Soil	02/19/2020 14:23	02/21/2020 10:30
SS-17	2002010-17	Soil	02/19/2020 14:45	02/21/2020 10:30
SS-18	2002010-18	Soil	02/19/2020 15:10	02/21/2020 10:30
SS-19	2002010-19	Soil	02/19/2020 15:35	02/21/2020 10:30
RB-01	2002010-20	Water	02/19/2020 7:30	02/21/2020 10:30

## USEPA CLP COC (LAB COPY)

Date Shipped: 2/20/2020

Carrier Name: FedEx

Airbill No: 777818186723

## CHAIN OF CUSTODY RECORD

DAS #: R35756

Cooler #: K5

No: 3-022020-125952-0002

Lab: USEPA Region III Environmental Science Center

Lab Contact: Kevin Poff

Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SS-01	R35756-01	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1052 (6 C) (1)	P-01	02/19/2020 09:15	2002010-01
SS-02	R35756-02	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1055 (6 C) (1)	P-02	02/19/2020 09:37	-02
SS-03	R35756-03	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1058 (6 C) (1)	P-03	02/19/2020 10:05	-03
SS-04	R35756-04	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1061 (6 C) (1)	P-03	02/19/2020 10:10	-04
SS-05	R35756-05	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1064 (6 C) (1)	P-04	02/19/2020 10:20	-05
SS-06	R35756-06	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1067 (6 C) (1)	P-05	02/19/2020 10:35	-06
SS-07	R35756-07	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1070 (6 C) (1)	P-06	02/19/2020 10:50	-07
SS-08	R35756-08	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1073 (6 C) (1)	P-07	02/19/2020 11:15	-08
SS-09	R35756-09	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1076 (6 C) (1)	P-08	02/19/2020 11:50	-09
SS-10	R35756-10	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1079 (6 C) (1)	P-09	02/19/2020 11:55	-10
SS-11	R35756-11	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1082 (6 C) (1)	P-10	02/19/2020 12:20	-11
SS-12	R35756-12	Soil/Non-responsive based on revised scope	Grab	Cr+6(21)	3-1085 (6 C) (1)	P-11	02/19/2020 13:25	-12

Sample(s) to be used for Lab QC: SS-01 Tag 3-1052 - Special Instructions: Please return cooler with FedEx return label inside	Shipment for Case Complete? Y
Analysis Key: Cr+6=Hexavalent Chromium	Samples Transferred From Chain of Custody #
Samplers: Non-responsive based on revised scope Non-responsive based on revised scope	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Non-responsive based on revised scope Non-responsive based on revised scope Non-responsive based on revised scope Non-responsive based on revised scope Non-responsive based on revised scope	TechLaw	2/20/20 1700	Non-responsive based on revised scope Non-responsive based on revised scope Non-responsive based on revised scope Non-responsive based on revised scope Non-responsive based on revised scope	2/21/20 10:30	4.8°C 2/21/20

## USEPA CLP COC (LAB COPY)

Date Shipped: 2/20/2020

Carrier Name: FedEx

Airbill No: 777818186723

## CHAIN OF CUSTODY RECORD

DAS #: R35756

Cooler #: K5

No: 3-022020-125952-0002

Lab: USEPA Region III Environmental Science Center

Lab Contact: Kevin Poff

Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SS-13	R35756-13	Soil/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1088 (6 C) (1)	P-12	02/19/2020 13:30	2002010-13
SS-14	R35756-14	Soil/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1091 (6 C) (1)	P-12	02/19/2020 13:40	-14
SS-15	R35756-15	Soil/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1094 (6 C) (1)	P-13	02/19/2020 14:07	-15
SS-16	R35756-16	Soil/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1097 (6 C) (1)	P-14	02/19/2020 14:23	-16
SS-17	R35756-17	Soil/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1100 (6 C) (1)	B-15	02/19/2020 14:45	-17
SS-18	R35756-18	Soil/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1103 (6 C) (1)	B-16	02/19/2020 15:10	-18
SS-19	R35756-19	Soil/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1106 (6 C) (1)	B-17	02/19/2020 15:35	-19
RB-01	R35756-R1	Water/ Non-responsive based on revised scope	Grab	Cr+6(21)	3-1108 (NH4OH)/(NH4)2SO4 pH 9.5) (1)	Z	02/19/2020 07:30	-20

Special Instructions: Please return cooler with FedEx return label inside		Shipment for Case Complete? Y	
Analysis Key: Cr+6=Hexavalent Chromium		Samples Transferred From Chain of Custody #	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Non-responsive based on revised scope	TEHLAW	2/20/20 1700	ESAT	2/21/20 10:30	4.8 °C 2/21/20



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-01

Station ID: SS-01

Sample Matrix: Soil

Collected: 02/19/2020

% Solids	65.2			% by Weight 1	02/26/2020 12:26	02/28/2020 12:40	USGS	I-5753-85/R3QA056
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## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-02

Station ID: SS-02

Sample Matrix: Soil

Collected: 02/19/2020

% Solids	78.3			% by Weight 1	02/26/2020 12:26	02/28/2020 12:40	USGS	I-5753-85/R3QA056
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## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-03

Station ID: SS-03

Sample Matrix: Soil

Collected: 02/19/2020

% Solids	80.3			% by Weight 1	02/26/2020 12:26	02/28/2020 12:40	USGS	I-5753-85/R3QA056
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# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-04							
Station ID:	SS-04							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	75.4			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-05							
Station ID:	SS-05							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	68.5			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-06							
Station ID:	SS-06							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	68.7			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056



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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-07							
Station ID:	SS-07							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	61.2			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-08							
Station ID:	SS-08							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	68.0			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-09							
Station ID:	SS-09							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	48.4			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056



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Environmental Science Center  
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701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-10							
Station ID:	SS-10							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	73.2			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-11							
Station ID:	SS-11							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	69.6			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-12							
Station ID:	SS-12							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	75.1			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056



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Environmental Science Center  
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701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-13							
Station ID:	SS-13							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	70.5			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-14							
Station ID:	SS-14							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	70.1			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-15							
Station ID:	SS-15							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	76.9			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056



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Environmental Science Center  
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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-16							
Station ID:	SS-16							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	75.4			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-17							
Station ID:	SS-17							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	66.2			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-18							
Station ID:	SS-18							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	79.4			% by Weight 1		02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
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701 Mapes Road  
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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-19							
Station ID:	SS-19							
Sample Matrix:	Soil							
Collected:	02/19/2020							
% Solids	59.9			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-01							
Station ID:	SS-01							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U	UJ	0.61	ug/g dry	1	02/27/2020 15:25	03/03/2020 17:33	EPA 218.6/R3QA161

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-02							
Station ID:	SS-02							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.51	ug/g dry	1	02/27/2020 15:25	03/03/2020 13:56	EPA 218.6/R3QA161



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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-03							
Station ID:	SS-03							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.50	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:03	EPA 218.6/R3QA161

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-04							
Station ID:	SS-04							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.53	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:10	EPA 218.6/R3QA161

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-05							
Station ID:	SS-05							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.58	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:17	EPA 218.6/R3QA161



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-06  
Station ID: SS-06  
Sample Matrix: Soil  
Collected: 02/19/2020

Hexavalent Chromium	U		0.58	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:24	EPA 218.6/R3QA161
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Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-07  
Station ID: SS-07  
Sample Matrix: Soil  
Collected: 02/19/2020

Hexavalent Chromium	U		0.65	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:46	EPA 218.6/R3QA161
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Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-08  
Station ID: SS-08  
Sample Matrix: Soil  
Collected: 02/19/2020

Hexavalent Chromium	U		0.59	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:53	EPA 218.6/R3QA161
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# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-09							
Station ID:	SS-09							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.82	ug/g dry	1	02/27/2020 15:25	03/03/2020 15:00	EPA 218.6/R3QA161

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-10							
Station ID:	SS-10							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.55	ug/g dry	1	02/27/2020 15:25	03/03/2020 15:07	EPA 218.6/R3QA161

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-11							
Station ID:	SS-11							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U	UJ	0.57	ug/g dry	1	02/27/2020 15:25	03/03/2020 18:09	EPA 218.6/R3QA161



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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701 Mapes Road  
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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-12							
Station ID:	SS-12							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.53	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:04	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-13							
Station ID:	SS-13							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.57	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:11	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-14							
Station ID:	SS-14							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.57	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:37	EPA 218.6/R3QA161



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Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-15							
Station ID:	SS-15							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.52	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:43	EPA 218.6/R3QA161

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-16							
Station ID:	SS-16							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.53	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:50	EPA 218.6/R3QA161

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID:	2002010-17							
Station ID:	SS-17							
Sample Matrix:	Soil							
Collected:	02/19/2020							
Hexavalent Chromium	U		0.60	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:57	EPA 218.6/R3QA161



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
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701 Mapes Road  
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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-18  
Station ID: SS-18  
Sample Matrix: Soil  
Collected: 02/19/2020

Hexavalent Chromium	U		0.50	ug/g dry	1	02/27/2020 15:25	03/03/2020 17:05	EPA 218.6/R3QA161
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## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-19  
Station ID: SS-19  
Sample Matrix: Soil  
Collected: 02/19/2020

Hexavalent Chromium	U		0.67	ug/g dry	1	02/27/2020 15:25	03/03/2020 17:12	EPA 218.6/R3QA161
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## Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
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Lab ID: 2002010-20  
Station ID: RB-01  
Sample Matrix: Water  
Collected: 02/19/2020

Hexavalent Chromium	U		1.00	ug/L	1	02/26/2020 10:00	02/26/2020 12:40	EPA 218.6/R3QA161
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
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701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

QC Data  
Physical Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch BB02603 - PD60/PD105 ESAT

Duplicate (BB02603-DUP1) Source: 2002010-01 Prepared: 02/26/2020 12:26 Analyzed: 02/28/2020 12:40

% Solids	67.3	% by Weight	65.2	3	20
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Duplicate (BB02603-DUP2) Source: 2002010-11 Prepared: 02/26/2020 12:26 Analyzed: 02/28/2020 12:40

% Solids	68.2	% by Weight	69.6	2	20
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## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
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Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

QC Data  
Classical Chemistry Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch BB02602 - Hex Chrom Prep ESAT

Blank (BB02602-BLK1)				Prepared: 02/26/2020 10:00		Analyzed: 02/26/2020 12:19				
Hexavalent Chromium	U	1.00	ug/L							
LCS (BB02602-BS1)				Prepared: 02/26/2020 10:00		Analyzed: 02/26/2020 12:33				
Hexavalent Chromium	39.7	1.00	ug/L	40.000		99	90-110			
Duplicate (BB02602-DUP1)				Source: 2002010-20		Prepared: 02/26/2020 10:00		Analyzed: 02/26/2020 12:48		
Hexavalent Chromium	U	1.00	ug/L		U				20	
Matrix Spike (BB02602-MS1)				Source: 2002010-20		Prepared: 02/26/2020 10:00		Analyzed: 02/26/2020 12:55		
Hexavalent Chromium	40.4	1.00	ug/L	40.000	U	101	90-110			

## Batch BB02604 - Hex Chrom Prep ESAT

Blank (BB02604-BLK1)				Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 12:22				
Hexavalent Chromium	U	0.40	ug/g wet							
LCS (BB02604-BS1)				Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 12:36				
Hexavalent Chromium	3.82	0.40	ug/g wet	4.0000		95	90-110			
Duplicate (BB02604-DUP1)				Source: 2002010-01		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 17:40		
Hexavalent Chromium	0.105	0.61	ug/g dry		0.125			17	20	
Duplicate (BB02604-DUP2)				Source: 2002010-11		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 18:16		
Hexavalent Chromium	0.120	0.57	ug/g dry		0.198			49	20	D
Matrix Spike (BB02604-MS1)				Source: 2002010-01		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 17:47		
Hexavalent Chromium	0.132	0.61	ug/g dry	6.1186	0.125	0.1	75-125			A



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: WEIRTON BOP IMPLOSION SITE

Project #: DAS R35756

QC Data  
Classical Chemistry Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

## Batch BB02604 - Hex Chrom Prep ESAT

Matrix Spike (BB02604-MS2)		Source: 2002010-01		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 17:54				
Hexavalent Chromium	380	12.3	ug/g dry	1193.1	0.125	32	75-125			A
Matrix Spike (BB02604-MS3)		Source: 2002010-11		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 18:23				
Hexavalent Chromium	0.180	0.57	ug/g dry	5.7368	0.198	NR	75-125			A
Matrix Spike (BB02604-MS4)		Source: 2002010-11		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 18:30				
Hexavalent Chromium	1040	57.4	ug/g dry	1450.7	0.198	72	75-125			A
Post Spike (BB02604-PS1)		Source: 2002010-01		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 18:01				
Hexavalent Chromium	103		ug/L	100.00	2.05	101	85-115			
Post Spike (BB02604-PS2)		Source: 2002010-11		Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 18:37				
Hexavalent Chromium	105		ug/L	100.00	3.44	101	85-115			
Reference (BB02604-SRM1)				Prepared: 02/27/2020 15:25		Analyzed: 03/03/2020 12:43				
Hexavalent Chromium	113	7.98	ug/g wet	126.00		89	65-135			



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Science Center  
Region III Laboratory  
701 Mapes Road  
Fort Meade, Maryland 20755-5350



Site Name: **WEIRTON BOP IMPLOSION SITE**

Project #: **DAS R35756**

**Notes and Definitions**

- UJ The analyte was not detected at or above the quantitation limit. The quantitation limit is an estimate.
- D Source sample result and/or duplicate sample result are below the quantitation limit and the RPD is artificially high. Precision data (RPD value) has no significance for this QC Sample.
- A Quality control value is outside acceptance limits.
- %REC Percent Recovery
- RPD Relative Percent Difference
- U Analyte included in the analysis, but not detected at or above the quantitation limit.
- NR Not Reported

**QUANTITATION LIMIT:** The lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method and that takes into account analytical adjustments made during sample preparation and analysis.

**SOLID SAMPLE RESULTS - REPORTING PROTOCOL:** Percent Solids (percent dry wt at 105 degrees C) determinations are routinely performed for most organic and inorganic analyses. Consequently, these samples are analyzed wet and converted to a dry weight result for reporting purposes. If metals and mercury analyses are requested, they are routinely prepared for analyses by an initial drying at 60 degrees C, homogenized prior to digestion, and are analyzed and reported on a dry weight basis. Oil-type samples are analyzed and reported on a wet weight basis for all analyses because of the nature of the sample matrix. Any exceptions to this protocol will be noted in the narrative.

**ON-DEMAND:** The term 'on-demand' analysis, if noted in the report narrative, refers to Section 13.1.4 in the Region III OASQA Laboratory Quality Manual, which provides procedures for non-routine analyses or analytes.

TechLaw, Inc.  
START 5 Region III  
EP-S3-15-03

Weirton BOP Implosion Site  
Removal Assessment Trip Report  
Revision: Final  
June 30, 2020

**ATTACHMENT 4**  
**DATA VALIDATION REPORT**  
**ASBESTOS**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
Environmental Sciences Center  
701 Mapes Road  
Fort Meade, Maryland 20755-5350

DATE: 6/2/2020

SUBJECT: Region III Data QA Review

FROM: Eric Graybill  
Region III ESAT RPO (3LS20)

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

TO: DEBORAH LINDSEY  
Hazardous Site Cleanup Division (HSCD)

Attached is the data validation report for the WEIRTON BOP IMPLOSION SITE site for DAS# R35754; SDG# EMSL04 completed by the Region III Environmental Services Assistance Team (ESAT) contractor, ICF International, under the direction of Region III LSASD.

If you have any questions regarding this review, please call Eric Graybill at (410)-305-2665.

Attachment

cc:

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

TO: #0002 TDF: #0520008





ICF  
ESAT Region 3  
US Environmental Protection Agency Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Phone 410-305-3012

**Date:** May 19, 2020

**To:** ESAT Region 3 Project Officer

**From:** non-responsive based on revised  
Validator

non-responsive based on revised  
Reviewer

**Subject:** Inorganic Data Validation (S4VM)  
Weirton BOP Implosion  
R35754 EMSL04

### **Overview**

This data package consisted of nineteen (19) soil samples, including two (2) field duplicate pairs, analyzed for asbestos utilizing polarized light microscopy (PLM).

Analyses were performed by EMSL Analytical, Inc. (EMSL). The samples were submitted to the laboratory directly by the sampling contractor. The laboratory indicated analyses were performed according to Test Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116 July 1993, with milling prep.

Data were validated according to the USEPA PLM Validation Process Guidelines for Asbestos Data Review and with guidance from the National Functional Guidelines for Inorganic Superfund Methods Data Review and are assigned the Superfund Data Validation Label S4VM (Stage\_4\_Validation\_Manual).

The following validation narrative is an evaluation of laboratory reported data based on the electronic data package received by Region 3 on May 7, 2020.

An Electronic Data Deliverable (EDD) was provided by the laboratory. It was protected and could not be modified by the validator. No EDD is provided with this data validation report.

### **Summary**

No data quality outliers or technical deficiencies were identified that would require rejection of sample results. Missing Refractive Index (RI) Liquid Calibration required estimation of sample results.

**Minor Problem**

The RI Liquid Calibration was not included in the data package. Visual Estimation and Point Count Limits of Quantification (LOQs) are estimated and have been qualified "UJ".

**Notes**

Mill preparation can reduce fiber size. While allowable to homogenize samples under the method, care must be taken to discontinue as soon as the material appears homogenous. This cannot be evaluated through the data package. No data were qualified based on this finding.

Asbestos fibers classified as chrysotile by the laboratory were detected in trace amounts in visual estimation of sample SS-12. The result for this sample was below the LOQ in point counting.

Data for field duplicate pairs SS-03/SS-04 and SS-13/SS-14 were comparable. No asbestos fibers were detected in either analysis.

For the laboratory duplicate analysis performed on sample SS-12, results were comparable (both results were below the LOQ in point counting). For the laboratory duplicate analyses performed on samples SS-01 and SS-07, no asbestos fibers were detected in any sample pair. No data were qualified based on laboratory precision.

Laboratory blanks associated with the samples in this SDG were free of asbestos.

Microscope alignment verification is present and shows proper alignment.

Reference sample analysis and fiber identification criteria for the visual examination trace results were reviewed by the validator and found to be accurate and consistent.

**Glossary of Inorganic Data Qualifier Codes**

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.

## National Asbestos Data Entry Spreadsheet (NADES) for Bulk &amp; Soil Analysis by PLM

Lab Name: EMSL04 Analyzed by: Non-response  
 Lab Job No: 042004637 Analysis date: 3/5/2020  
 Data Entry by: Non-response bas QA by: Non-response  
 Data Entry Date: 3/9/2020 QA Date: 3/10/2020

Client Sample Number	Index Suffix Char.	Index Suffix No.	QA Type (a)	Lab Sample Number	Mineral Type (b)	OPTICAL PROPERTIES								Comments
						Morph	Fiber Color	Sign Elong. (+/-)	Pleoch (Y/N)	Angle Extinct.	Ref. Index $\alpha$ (parallel)	Ref. Index $\gamma$ (perpendicular)	Biref.	
SS-01			Not QA	042004637-0001										AB 3/5/2020
SS-02			Not QA	042004637-0002										AB 3/5/2020
SS-03			Not QA	042004637-0003										AB 3/5/2020
SS-04			Not QA	042004637-0004										AB 3/5/2020
SS-05			Not QA	042004637-0005										AB 3/5/2020
SS-06			Not QA	042004637-0006										AB 3/5/2020
SS-07			Not QA	042004637-0007										AB 3/5/2020
SS-08			Not QA	042004637-0008										AB 3/5/2020
SS-09			Not QA	042004637-0009										AB 3/5/2020
SS-10			Not QA	042004637-0010										QA 3/5/2020
SS-11			Not QA	042004637-0011										QA 3/5/2020
SS-12			Not QA	042004637-0012	CH	W	C	+	N	P	1.551	1.557	L	QA 3/5/2020
SS-13			Not QA	042004637-0013										QA 3/5/2020
SS-14			Not QA	042004637-0014										QA 3/5/2020
SS-15			Not QA	042004637-0015										QA 3/5/2020
SS-16			Not QA	042004637-0016										QA 3/5/2020
SS-17			Not QA	042004637-0017										QA 3/5/2020
SS-18			Not QA	042004637-0018										QA 3/5/2020
SS-19			Not QA	042004637-0019										QA 3/5/2020
SS-01			LD	042004637-0001A										JP 3/5/2020 - Inter-analyst
SS-07			LD	042004637-0007A										AB 3/5/2020 - Intra-analyst
SS-12			LD	042004637-0018	CH	W	C	+	N	P	1.551	1.554	L	AG 3/5/2020 - Inter-analyst

FILE NAME: R35754 EMSL04 042004637 03-05-20 soil PLM.xlsm

Page 11 of 53

**R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm**  
**National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count**

Site or Project Name: R35754  
 State/Federal Site or Project Identifier: R35754  
 Site/Project Identifier Code: R35754  
 Lab Name: EMSL04  
 Lab Job No: 042004637  
 Date received by lab: 02/21/20  
 Analyzed by: A. Burke  
 Analysis Date: 3/5/2020

Point Count Method: 17A USE PLM

Data Entry by: Non-responsive  
 Data Entry Date: 3/8/2020  
 QA by: Non-responsive  
 QA Date: 3/10/2020

**ABBREVIATED NOTES:**

**(a) Valid QA Types:**

Not QA Not a QA sample  
 LD Lab Duplicate

**(b) Valid Mineral Types:**

AC actinolite	WRTA winchite/richterite/tremolite/actinolite
AM amosite	OA other amphibole
AN anthophyllite	NAM non-asbestos material
CH chrysotile	OM other mineral type
CR crocidolite	(c) OM Description Standard Selections:
TR tremolite	

Tacronite  
 Erionite

Client Sample Number	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample Number	Sample Appearance	Points Counted	Counts for each mineral type (b)										Validation Qualifier	Comments
							AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM		
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	<0.25% CH - QA 3/5/2020
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	QA 3/5/2020
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	WJ	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

## National Asbestos Data Entry Spreadsheet (NADES) for Bulk &amp; Soil Analysis by PLM Point Count

## ANALYTICAL REPORT

FILE NAME: R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm

PROJECT INFORMATION						ANALYSIS INFORMATION				ABBREVIATED NOTES											
Site/Project Name:	R35754					Method: EPA 600_PC	Analysis By:	Non-response	(a) Valid QA Types: Not QA - Not a QA sample LD - Lab Duplicate  (c) OM Description Standard Selections: Taconite Erionite	(b) Valid Mineral Types: AC - actinolite AM - amosite AN - anthophyllite CH - chrysotile CR - crocidolite TR - tremolite WRTA - winchite/richterite/tremolite/actinolite OA - other amphibole NAM - non-asbestos material OM - other mineral type (specify in "other mineral description" field)											
State/Federal Site/Project Identifier:	R35754						Analysis Date:	3/5/2020													
Site/Project Identifier Code:	R35754						Data Entry by:	Non-response													
Lab Name:	EMSL04						Data Entry Date:	3/9/2020													
Lab Job Number:	042004637						QA by:	Non-response													
Date Received by lab:	02/21/20					QA Date:	3/10/2020														

Client Sample ID	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample ID	Sample Appearance	Points Counted	Grav. Reduction		Concentration (%) for each mineral type (b)												Total (%)
							Ash fraction	Acid Fraction	AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM	OM Type (b)		
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fib	400	1.000	1.000												0.0	
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fib	400	1.000	1.000												0.0	



EMSL ANALYTICAL, INC.

**EMSL Analytical, Inc.**

**Asbestos Data Package**

**EMSL Order ID: 042004637**

**Techlaw, Inc.  
DAS #R35754**

**Prepared By: EMSL Special Projects Group**

**Date: March 10, 2020**



EMSL ANALYTICAL, INC.

## **TABLE OF CONTENTS**

1. Case Narrative
2. Tabulated Sample Results
3. Worksheets/Bench Sheets
4. QC Data Reports/Logs
5. Client and EMSL Internal Chains of Custody
6. Equipment Performance Checks
7. NVLAP/AIHA Certifications
8. Customer Correspondence
9. Shipping Documentation



EMSL ANALYTICAL, INC.

## 1. Case Narrative



EMSL ANALYTICAL, INC.  
200 ROUTE 130 NORTH  
CINNAMINSON, NJ 08077  
PHONE: (800) 220-3675  
FAX: (856) 858-4960

March 10, 2020

Non-responsive based on revised scope  
Non-responsive based on revised scope

Techlaw, Inc.  
139 Peninsula Street  
Wheeling, WV 26003  
(304)230-1230

Non-responsive based on revised scope  
Non-responsive based on revised scope @TechLawInc.com

Re: Narrative: PLM EPA/600/R-93/116 with Milling Prep; EMSL Order: 042004637, Case #R35754

Dear Non-responsive based on revised scope:

On February 21, 2020, EMSL Analytical, Inc. in Cinnaminson, NJ received nineteen (19) soil samples for asbestos content analysis via PLM EPA/600/R-93/116 with milling. All samples were received via FedEx under Chain of Custody #3-022020-124148-0001 from Techlaw, Inc. The samples were received in good condition and were logged in following normal lab procedures.

#### PLM EPA/600/R-93/116 with Milling Prep

The samples were dried prior to being placed in the puck mill. The milled samples were analyzed via Polarized Light Microscopy (PLM) using the procedures from the PLM EPA 600/R-93/116 method. All data was reported on a percent asbestos basis. Per the EMSL SOP method, any sample having asbestos content (visual estimation) ranging from <1 to 10% was subject to a 400 point count. The limit of quantification for this method is <0.25

#### QC Performed

Two inter-analyst and one intra-analyst QC analyses were completed with acceptable results. Quality Control for this project was performed in compliance with EMSL's Quality Assurance Manual.

*I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or their designee, as verified by the following signature.*

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

3/10/20

Date

Benjamin Ellis  
Senior Scientist - Special Projects  
EMSL Cinnaminson, NJ





EMSL ANALYTICAL, INC.

## 2. Tabulated Sample Results

**EMSL Analytical, Inc.**

200 Route 130 North Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

http://www.EMSL.com / cinnaslab@EMSL.com

**EMSL Order:** 042004637**Customer ID:** TCHL75**Customer PO:****Project ID:****Attention:**Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

TechLaw Inc.

139 Peninsula St.

Wheeling, WV 26003

**Phone:**Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope**Fax:****Received:** 02/21/2020 10:40 AM**Analysis Date:** 03/05/2020**Collected:** 02/19/2020**Project:** DAS #R35754**Test Report: Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/116 Method  
using PLM and Milling Prep. Quantitation using 400 Point Count Procedure**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS-01 042004637-0001	P-01 - R35754-01 / 3-1050	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-02 042004637-0002	P-02 - R35754-02 / 3-1054	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-03 042004637-0003	P-03 - R35754-03 / 3-1057	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-04 042004637-0004	P-03 - R35754-04 / 3-1060	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-05 042004637-0005	P-04 - R35754-05 / 3-1063	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-06 042004637-0006	P-05 - R35754-06 / 3-1066	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-07 042004637-0007	P-06 - R35754-07 / 3-1069	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-08 042004637-0008	P-07 - R35754-08 / 3-1072	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-09 042004637-0009	P-08 - R35754-09 / 3-1075	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-10 042004637-0010	P-09 - R35754-10 / 3-1078	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected

Disclaimer: Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. The limit of detection as stated in the method is 0.25%. EMSL Analytical Inc suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval of EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc., bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc., liability is limited to the cost of sample analysis. The test results contained within this report meet the requirements of NELAP unless otherwise noted. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from: 03/06/2020 09:29:15

ASE\_PLMPC\_0006\_0003 Printed 3/6/2020 9:29:19AM

Page 6 of 33  
Page 1 of 3

**EMSL Analytical, Inc.**

200 Route 130 North Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

http://www.EMSL.com / cinnaslab@EMSL.com

**EMSL Order:** 042004637**Customer ID:** TCHL75**Customer PO:****Project ID:****Attention:**

TechLaw Inc.  
139 Peninsula St.  
Wheeling, WV 26003

**Phone:** (304) 230-1230**Fax:****Received:** 02/21/2020 10:40 AM**Analysis Date:** 03/05/2020**Collected:** 02/19/2020**Project:** DAS #R35754

**Test Report: Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/116 Method  
using PLM and Milling Prep. Quantitation using 400 Point Count Procedure**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS-11 042004637-0011	P-10 - R35754-11 / 3-1081	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-12 042004637-0012	P-11 - R35754-12 / 3-1084	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	<0.25% Chrysotile
SS-13 042004637-0013	P-12 - R35754-13 / 3-1087	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-14 042004637-0014	P-12 - R35754-14 / 3-1090	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-15 042004637-0015	P-13 - R35754-15 / 3-1093	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-16 042004637-0016	P-14 - R35754-16 / 3-1096	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-17 042004637-0017	B-15 - R35754-17 / 3-1099	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-18 042004637-0018	B-16 - R35754-18 / 3-1102	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
SS-19 042004637-0019	B-17 - R35754-19 / 3-1105	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected

Disclaimer: Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. The limit of detection as stated in the method is 0.25%. EMSL Analytical Inc suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval of EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc., bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc., liability is limited to the cost of sample analysis. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from: 03/06/2020 09:29:15



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077  
Phone/Fax: (800) 220-3675 / (856) 786-5974  
<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 042004637  
Customer ID: TCHL75  
Customer PO:  
Project ID:

## Attention:

TechLaw Inc.  
139 Peninsula St.  
Wheeling, WV 26003

Phone: (304) 230-1230

Fax:

Received: 02/21/2020 10:40 AM

Analysis Date: 03/05/2020

Collected: 02/19/2020

Project: DAS #R35754

## Test Report: Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/116 Method using PLM and Milling Prep. Quantitation using 400 Point Count Procedure

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type

## Analyst(s)

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

or other approved signatory

Disclaimer: Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. The limit of detection as stated in the method is 0.25%. EMSL Analytical Inc suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval of EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc., bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc., liability is limited to the cost of sample analysis. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from: 03/06/2020 09:29:15

FILENAME:

R35754 EMSL04 042004637 03-05-20 soil PLM.xlsm

**National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM**

Site/Project Identifier Code: R35754

Media: soil

Site or Project Name: R35754

Date received by lab: 2/21/2020

State/Federal Site or Project Identifier: R35754

Chain of Custody Number: 3-022020-124148-0001

Laboratory Name: EMSL04

Analyzed by: Non-responsive based on revised scope

Lab Job Number: 042004637

Analysis date: 3/5/2020

**COMMENTS (do not use commas)**

Also analyzed by Non-responsive based on revised scope and Non-responsive based on revised scope on 3/5/2020.

## National Asbestos Data Entry Spreadsheet (NADES) for Bulk &amp; Soil Analysis by PLM

Lab Name: EMSL04	Analyzed by: Non-response
Lab Job No: 042004637	Analysis date: 3/5/2020
Data Entry by: Non-responsive	QA by: Non-response
Data Entry Date: 3/9/2020	QA Date: 3/10/2020

Client Sample Number	Index Suffix Char.	Index Suffix No.	QA Type (a)	Lab Sample Number	Mineral Type (b)	OPTICAL PROPERTIES								Comments
						Morph	Fiber Color	Sign Elong. (+/-)	Pleoch (Y/N)	Angle Extinct.	Ref. Index $\alpha$ (parallel)	Ref. Index $\gamma$ (perpendicular)	Biref.	
SS-01			Not QA	042004637-0001										AB 3/5/2020
SS-02			Not QA	042004637-0002										AB 3/5/2020
SS-03			Not QA	042004637-0003										AB 3/5/2020
SS-04			Not QA	042004637-0004										AB 3/5/2020
SS-05			Not QA	042004637-0005										AB 3/5/2020
SS-06			Not QA	042004637-0006										AB 3/5/2020
SS-07			Not QA	042004637-0007										AB 3/5/2020
SS-08			Not QA	042004637-0008										AB 3/5/2020
SS-09			Not QA	042004637-0009										AB 3/5/2020
SS-10			Not QA	042004637-0010										OA 3/5/2020
SS-11			Not QA	042004637-0011										OA 3/5/2020
SS-12			Not QA	042004637-0012	CH	W	C	+	N	P	1.551	1.557	L	OA 3/5/2020
SS-13			Not QA	042004637-0013										OA 3/5/2020
SS-14			Not QA	042004637-0014										OA 3/5/2020
SS-15			Not QA	042004637-0015										OA 3/5/2020
SS-16			Not QA	042004637-0016										OA 3/5/2020
SS-17			Not QA	042004637-0017										OA 3/5/2020
SS-18			Not QA	042004637-0018										OA 3/5/2020
SS-19			Not QA	042004637-0019										OA 3/5/2020
SS-01			LD	042004637-0001A										JP 3/5/2020 - Inter-analyst
SS-07			LD	042004637-0007A										AB 3/5/2020 - Intra-analyst
SS-12			LD	042004637-0019A	CH	W	C	+	N	P	1.551	1.554	L	AG 3/5/2020 - Inter-analyst

R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm  
National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Visual Estimation  
ANALYTICAL REPORT  
FILE NAME: R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm

PROJECT INFORMATION										ANALYSIS INFORMATION										ABBREVIATED NOTES											
Site/Project Name:		R35754		Lab Name:		EMSL04		Method:		Analysis By:		Data Entry Date:		3/9/2020		(a) Valid QA Types:		(b) Valid Mineral Types, AC - actinolite, AM - amosite, AN - anthophyllite, CH - chrysotile, CR - crocidolite, TR - tremolite, WRTA - winchite/richterite/actinolite, OA - other amphibole, NAM - non-asbestos material, GM - other mineral type (specify in "other mineral description" field)		(c) QA Description (Standard Reference):											
Sample/Federal ID/Project Identifier:		R35754		Lab Job Number:		042004637		Analysis Date:		3/3/2020		QA by:		R35754/042004637		Lab QA - Not a QA sample				Taconite											
Site/Project Identifier Code:		R35754		Date Received by lab:		02/21/20		EPA 600_VI		Data Entry by:		R35754/042004637		QA Date:		3/10/2020				Erinite											
Client Sample Number	Sample Type	Index Suite Char	Index Suite No	QA Type No	Lab Sample Number	Sample Appearance	Ref Material	Base Mineral Type of Reference Material (b)	Enter percentages as a value, not a percent (E sample: Enter 60% as 60, not 0.60)										Other Amphibole (OA)	Non-asbestos Minerals (NAM)		Other Mineral Type (OM)		Deviation?	Comments						
									Actinolite (AC)		Amosite (AM)		Anthophyllite (AN)		Chrysotile (CH)		Crocidolite (CR)			Tremolite (TR)		Winchite/Richterite (WRTA)				Other Amphibole (OA)	NAM	Other Mineral Type (OM)			
Qual	AC-AP (%)	AC-MP (%)	Qual	AM-AP (%)	AM-MP (%)	Qual	AN-AP (%)	AN-MP (%)	Qual	CH-AP (%)	CH-MP (%)	Qual	CR-AP (%)	CR-MP (%)	Qual	TR-AP (%)	TR-MP (%)	Qual	WRTA-AP (%)	WRTA-MP (%)	Qual	OA-AP (%)	OA-MP (%)	Qual	NAM-AP (%)	NAM-MP (%)	Qual	OM-AP (%)	OM-MP (%)	Qual	OM Type (c)
S3-01	Soil			Net QA	042004637-0001	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-02	Soil			Net QA	042004637-0002	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-03	Soil			Net QA	042004637-0003	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-04	Soil			Net QA	042004637-0004	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-05	Soil			Net QA	042004637-0005	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-06	Soil			Net QA	042004637-0006	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-07	Soil			Net QA	042004637-0007	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-08	Soil			Net QA	042004637-0008	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-09	Soil			Net QA	042004637-0009	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-10	Soil			Net QA	042004637-0010	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AS 3/5/2020	
S3-11	Soil			Net QA	042004637-0011	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-12	Soil			Net QA	042004637-0012	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-13	Soil			Net QA	042004637-0013	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-14	Soil			Net QA	042004637-0014	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-15	Soil			Net QA	042004637-0015	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-16	Soil			Net QA	042004637-0016	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-17	Soil			Net QA	042004637-0017	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-18	Soil			Net QA	042004637-0018	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-19	Soil			Net QA	042004637-0019	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-20	Soil			Net QA	042004637-0020	Green/Non-F	Tremolite	TR	U			U			U			U			U			U					NA	OA 3/5/2020	
S3-21	Soil			LD	042004637-0021	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AP 3/5/2020 - Intergrated GC	
S3-22	Soil			LD	042004637-0022	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AP 3/5/2020 - Intergrated GC	
S3-23	Soil			LD	042004637-0023	Green/Non-F	Asbestos	AC	U			U			U			U			U			U					NA	AP 3/5/2020 - Intergrated GC	

**R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm**  
**National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count**

Site or Project Name: R35754  
 State/Federal Site or Project Identifier: R35754  
 Site/Project Identifier Code: R35754  
 Lab Name: EMSL04  
 Lab Job No: 042004637  
 Date received by lab: 02/21/20  
 Analyzed by: [Signature]  
 Analysis Date: 3/5/2020

Point Count Method: EPA 800.1C

Data Entry by: [Signature]  
 Data Entry Date: 3/9/2020  
 QA by: [Signature]  
 QA Date: 3/10/2020

**ABBREVIATED NOTES:**

(a) Valid QA Types:  
 Not QA Not a QA sample  
 LD Lab Duplicate

(b) Valid Mineral Types:

AC actinolite	WRTA winchite/richterite/tremolite/actinolite
AM amosite	OA other amphibole
AN anthophyllite	NAM non-asbestos material
CH chrysotile	OM other mineral type
CR crocidolite	(c) OM Description Standard Selections:
TR tremolite	Tecolite
	Etonite

Client Sample Number	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample Number	Sample Appearance	Points Counted	Counts for each mineral type (b)										OM Type (c)	Deviation?	Comments
							AC	AM	AN	CH	CR	TR	WRTA	QA	NAM	OM			
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020	
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	<0.25% CH - QA 3/5/2020	
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	QA 3/5/2020	
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	JP 3/5/2020 - Inter-analyst QC	
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	AB 3/5/2020 - Inter-analyst QC	
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fibrous-Homogeneous	400	0	0	0	0	0	0	0	0	0	0	No	<0.25% CH - AG 3/5/2020 - Inter-analyst QC	

R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm  
National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count  
ANALYTICAL REPORT  
FILE NAME: R35754\_EMSL04\_042004637\_03-05-20\_soil\_PLM.xlsm

PROJECT INFORMATION			ANALYSIS INFORMATION			ABBREVIATED NOTES		
Site/Project Name:	R35754		Method:	Analysis By:	Non-response	(a) Valid QA Types:	(b) Valid Mineral Types:	
State/Federal Site/Project Identifier:	R35754		EPA	Analysis Date:	3/5/2020	Not QA - Not a QA sample	AC - actinolite AM - amosite AN - anthophyllite	
Site/Project Identifier Code:	R35754		600_PC	Data Entry by:	Non-response	LD - Lab Duplicate	CH - chrysotile CR - crocidolite TR - tremolite	
Lab Name:	EMSL04			Data Entry Date:	3/9/2020		WRTA - winchite/richterite/tremolite/actinolite	
Lab Job Number:	042004637			QA by:	Non-response	(c) OM Description Standard Selections:	OA - other amphibole NAM - non-asbestos material	
Date Received by lab:	02/21/20			QA Date:	3/10/2020	Taconite Erionite	OM - other mineral type (specify in "other mineral description" field)	

Client Sample ID	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample ID	Sample Appearance	Points Counted	Grav. Reduction		Concentration (%) for each mineral type (b)												OM Type (b)	Total (%)
							Ash fraction	Acid Fraction	AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM				
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fib	400	1.000	1.000														0.0
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fib	400	1.000	1.000														0.0
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fib	400	1.000	1.000														0.0
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fib	400	1.000	1.000														0.0
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fib	400	1.000	1.000														0.0
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fib	400	1.000	1.000														0.0
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fib	400	1.000	1.000														0.0
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fib	400	1.000	1.000														0.0
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fib	400	1.000	1.000														0.0
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fib	400	1.000	1.000														0.0
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fib	400	1.000	1.000														0.0
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fib	400	1.000	1.000														0.0
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fib	400	1.000	1.000														0.0
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fib	400	1.000	1.000														0.0
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fib	400	1.000	1.000														0.0
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fib	400	1.000	1.000														0.0
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fib	400	1.000	1.000														0.0
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fib	400	1.000	1.000														0.0
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fib	400	1.000	1.000														0.0
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fib	400	1.000	1.000														0.0
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fib	400	1.000	1.000														0.0
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fib	400	1.000	1.000														0.0



EMSL ANALYTICAL, INC.

### 3. Worksheets/ Bench Sheets

## Monthly PLM Bulk QC Summary

Laboratory: EMSL04

Report # 1

Month/Year: Mar-20

Date	Reference # xxxx	Sample #	Original Result		QC Result		Variance		Conclusion	Comment or CAR#
			Analyst	% Asb	Analyst	% Asb	Original	QC		
<div>Variance (Var)The difference of the 2 results divided by the mean of the 2 results</div>										
Acceptance Criteria										
<div><div>Inter-Analyst:</div><div>The QC Passes when: <math>-1 \leq Var \leq 1</math></div><div>Intra-Analyst:</div><div>The QC Passes when: <math> Var  \leq 1</math></div><div>Qualitative Failure:</div><div>A Qualitative Failure occurs when the Original and QC Asbestos Types Do Not Match</div><div>Warning:</div><div>Warnings Occur when the Original and QC Results are within the variance limits (stated above), but the 2 results are on opposite sides of the <math>&gt;1\%</math> ACM definition.</div></div>										
1	3/5/20	042004637	-0001	AB	0	JP	0	0.00	0.00	Pass
2	3/5/20	042004637	-0007	AB	0	AB	0	0.00	N/A	Pass
3	3/5/20	042004637	-0012	OA	<0.25	AG	<0.25	0.00	0.00	Pass

**National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM**  
**OPTICAL PROPERTIES DATA RECORDING SHEET**

Site/Project Name:	R35754
State/Federal Site/Project Identifier:	
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job Number:	042004637

Date Received by Lab: 2/21/2020

Method: EPA 600

Analysis By: Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

Analysis Date: 3/5/2020

Media: Bulk Soil Non-responsive based on revised scope  
Non-responsive based on revised scope

[illegible]

### Comments

### VALID MINERAL TYPES

AC	actinolite
AM	amosite
AN	anthophyllite
CH	chrysotile

CR	crocidolite
TR	tremolite
WRTA	winchite/richterite/tremolite/actinolite
OA	other amphibole

NAM non-asbestos material  
OM other mineral type  
OM Description Standard Selections:  
Taconite Erionite

**National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Visual Estimation****SAMPLE/ANALYSIS INFORMATION**

Site/Project Name: R35754  
 State/Federal Site/Project Identifier: \_\_\_\_\_  
 Site/Project Identifier Code: R35754  
 Lab Name: EMSL04  
 Lab Job Number: 042004637

Date Received by Lab: 02/21/20  
 Method: EPA 600  
 Analysis By: Non-responsive based on review  
 Analysis Date: 3/5/20  
 Media: Soil

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix No.	QA Type (Not QA or Lab Duplicate)	Lab Sample ID	Sample Appearance	Ref Material Description	Base Mineral Type of Reference Material
SS-01	Soil			Not QA	042004637-0001	Brown, non-fibrous, homogeneous	AC	AC
SS-02	Soil			Not QA	042004637-0002	Brown, non-fibrous, homogeneous	AC	AC
SS-03	Soil			Not QA	042004637-0003	Brown, non-fibrous, homogeneous	AC	AC
SS-04	Soil			Not QA	042004637-0004	Brown, non-fibrous, homogeneous	AC	AC
SS-05	Soil			Not QA	042004637-0005	Brown, non-fibrous, homogeneous	AC	AC
SS-06	Soil			Not QA	042004637-0006	Brown, non-fibrous, homogeneous	AC	AC
SS-07	Soil			Not QA	042004637-0007	Brown, non-fibrous, homogeneous	AC	AC
SS-08	Soil			Not QA	042004637-0008	Brown, non-fibrous, homogeneous	AC	AC
SS-09	Soil			Not QA	042004637-0009	Brown, non-fibrous, homogeneous	AC	AC
SS-10	Soil			Not QA	042004637-0010	Brown, non-fibrous, homogeneous	AC	AC
SS-11	Soil			Not QA	042004637-0011	Brown, non-fibrous, homogeneous	AC	AC
SS-12	Soil			Not QA	042004637-0012	Brown, non-fibrous, homogeneous	TR	TR
SS-13	Soil			Not QA	042004637-0013	Brown, non-fibrous, homogeneous	TR	TR
SS-14	Soil			Not QA	042004637-0014	Brown, non-fibrous, homogeneous	TR	TR
SS-15	Soil			Not QA	042004637-0015	Brown, non-fibrous, homogeneous	TR	TR
SS-16	Soil			Not QA	042004637-0016	Brown, non-fibrous, homogeneous	TR	TR
SS-17	Soil			Not QA	042004637-0017	Brown, non-fibrous, homogeneous	TR	TR
SS-18	Soil			Not QA	042004637-0018	Brown, non-fibrous, homogeneous	TR	TR
SS-19	Soil			Not QA	042004637-0019	Brown, non-fibrous, homogeneous	TR	TR

**VALID MINERAL TYPES**

AC - actinolite  
 AM - amosite  
 AN - anthophyllite  
 CH - chrysotile  
 CR - crocidolite  
 TR - tremolite  
 WRTA - winchite/  
 richterite/tremolite/actinolite  
 OA - other amphibole  
 NAM - non-asbestos material  
 OM - other mineral type

**COMMENTS:**

**National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Visual Estimation  
DATA**

Site/Project Name: R35754

Date Received by Lab: 02/21/20

State/Federal Site/Project Identifier: \_\_\_\_\_

Method: EPA 600

Site/Project Identifier Code: R35754

Analysis By: Non-responsive based on re Non-responsive based on re

Lab Name: EMSL04

Analysis Date: 3/5/2020

Lab Job Number: 042004637

Media: Soil

### VALID MINERAL TYPES

AC = actinofite

WRTA - winchite/

OM - other mineral type

AM : amosite

richt: enite/premolite

**OM Description Standard Selections:**

AN - anthophyllite

/actinolite

CH : chrysotile

OA - other amphibole

CR - crocidolite

NAM - non-asbestos

TR - tremolite

material

**Taconite**

### Enionite

[illegible]

## National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Point Count

Site/Project Name: R35754

Date Received by Lab: 02/1/20

State/Federal Site/Project Identifier: \_\_\_\_\_

Method: EPA 600

Site/Project Identifier Code: R35754

Analysis By: \_\_\_\_\_

Lab Name: EMSL04

Analysis Date: 3/5/2020

Lab Job Number: 042004637

Media: Soil

## VALID MINERAL TYPES

AC - actinolite  
AM - amosite  
AN - anthophyllite  
CH - chrysotile  
CR - crocidolite  
TR - tremolite  
Taconite

WRTA - winchite/nichtsenite/tremolite/actinolite  
OA - other amphibole  
NAM - non-asbestos material  
OM - other mineral type

OM Description Standard Selections  
Eriofite

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix Number	QA Type (Not QA or LD)	Lab Sample Number	Date Analyzed	Analyst Name	Sample Appearance	Points Counted	AC Counts	AM Counts	AN Counts	CH Counts	CR Counts	TR Counts	LA Counts	OA Counts	NAM Counts	OM Counts	OM Type	Deviation?	Comments
SS-01	Soil			Not QA	042004637-0001	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-02	Soil			Not QA	042004637-0002	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-03	Soil			Not QA	042004637-0003	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-04	Soil			Not QA	042004637-0004	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-05	Soil			Not QA	042004637-0005	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-06	Soil			Not QA	042004637-0006	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-07	Soil			Not QA	042004637-0007	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-08	Soil			Not QA	042004637-0008	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-09	Soil			Not QA	042004637-0009	3/5/2020	AB	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-10	Soil			Not QA	042004637-0010	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-11	Soil			Not QA	042004637-0011	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-12	Soil			Not QA	042004637-0012	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-13	Soil			Not QA	042004637-0013	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-14	Soil			Not QA	042004637-0014	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-15	Soil			Not QA	042004637-0015	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-16	Soil			Not QA	042004637-0016	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-17	Soil			Not QA	042004637-0017	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-18	Soil			Not QA	042004637-0018	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-19	Soil			Not QA	042004637-0019	3/5/2020	OA	B. white/gray	400	0	0	0	0	0	0	0	0	0	0		NO	

Comments



EMSL ANALYTICAL, INC.

## 4. QC Data Reports/Logs

**National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM**  
**OPTICAL PROPERTIES DATA RECORDING SHEET**

Site/Project Name:	R35754
State/Federal Site/Project Identifier:	
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job Number:	042004637 QC

Date Received by Lab: 2/21/2020

Method: Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

Analysis By:

Analysis Date: 3/5/2020

Media: Soil

[illegible]

## Comments

### VALID MINERAL TYPES

AC	actinolite
AM	amosite
AN	anthophyllite
CH	chrysotile

CR	crocidolite
TR	tremolite
WRTA	winchite/richterite/tremolite/actinolite
OA	other amphibole

NAM non-asbestos material  
OM other mineral type  
OM Description Standard Selections:  
Taconite Erionite

### SAMPLE/ANALYSIS INFORMATION

Site/Project Name:	R35754
State/Federal Site/Project Identifier:	
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job Number:	042004637 QC

Date Received by Lab: 02/21/20  
Method: EPA 600  
Analysis By: Non-responsive based on revised scope  
Analysis Date: 3/5/20  
Media: Soil

[illegible]

### VALID MINERAL TYPES

AC - actinolite  
AM - amosite  
AN - anthophyllite  
CH - chrysotile  
CR - crocidolite  
TR - tremolite  
WRTA - winchite/  
richterite/tremolite/actinolite  
OA - other amphibole  
NAM - non-asbestos material  
OM - other mineral type

**COMMENTS:**

**National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Visual Estimation  
DATA**

Site/Project Name:	R35754
State/Federal Site/Project Identifier:	
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job Number:	042004637 QC

Date Received by Lab: 02/21/20

Method: EPA 600

Analysis By: Non-responsive based on revised scope  
Non-responsive based on revised scope

Analysis Date: 2/5/2020

Media: Soil

### VALID MINERAL TYPES

AC - actinolite	WRTA - winchite/ richterite/tremolite	OM - other mineral type
AM - amosite		
AN - anthophyllite	/actinolite	OM Description Standard Selections:
CH - chrysotile	QA - other amphibole	Taconite
CR - crocidolite	NAM - non-asbestos	Enonite
TR - tremolite	material	

[illegible]

## National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Point Count

Site/Project Name: R35754

State/Federal Site/Project Identifier: \_\_\_\_\_

Site/Project Identifier Code: R35754

Lab Name: EMSL01

Lab Job Number: 042004637 QC

Date Received by Lab: 02/21/00

Method: EPA 600

Analysis By: Non-responsive based on revised scope

Analysis Date: 3/5/00

Media: Soil

## VALID MINERAL TYPES

AC - actinolite  
AM - amosite  
AN - anthophyllite  
CH - chrysotile  
CR - crocidolite  
TR - tremolite  
Tactonite

WRTA - winchite/richterite/tremolite/actinolite  
OA - other amphibole  
NAM - non-asbestos material  
OM - other mineral type

OM Description Standard Selections  
Enonite

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix Number	QA Type (Not QA or LD)	Lab Sample Number	Date Analyzed	Analyst Name	Sample Appearance	Points Counted	AC Counts	AM Counts	AN Counts	CH Counts	CR Counts	TR Counts	LA Counts	OA Counts	NAM Counts	OM Counts	OM Type	Deviation?	Comments
SS-01					001	3/5/00	Non-responsive	Dark, 1 Twp	400	0	0	0	0	0	0	0	0	0	0	C	NC	
SS-07					007	3/5/00	Non-responsive	Flu - huc	400	0	0	0	0	0	0	0	0	0	0	0	NC	
SS-12					012	3/5/00	Non-responsive	Flu - huc	400	0	0	0	0	0	0	0	0	0	0	0	LD	

Comments

## Page 25 of 53



# POINT COUNT WORKSHEET

Date: 3/5/20

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1	1					7
2	1					11
3	1					14
4	1					13
5						
6						
7						
8						
9						
10						
Total	4					45

Results:

A Tremolite = 8.16%  
04  
3/5/20

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

CALCULATIONS:  $P = (AP \cdot 100) / TP$

P = Percentage of Asbestos TP = Total number of non-empty Points

AP = number of Asbestos Points

NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"

NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"

Analyst

Non-responsive based on review  
Non-responsive based on review  
Non-responsive based on review

Non-responsive based on review  
Non-responsive based on review  
Non-responsive based on review  
Non-responsive based on review  
Non-responsive based on review

# Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Client:

Logged:

TAT:

**QC**

Address:

Date/Time Due:

## DAILY REFERENCE SLIDES

Fax:

Project:

Special Instructions

Order Number

Macroscopic			Treatment	COMPONENT TYPES										MICROSCOPIC																					
COLOR (C)				Asbestos			Fibrous			Non-Fibrous				Optical Properties																					
1 Brown	4 White	7 Black	1 Teased	1 Chrysotile	7 Cellulose	14 Quartz	Stereo Asbestos Est. %			Asbestos Type			% of Asbestos			Other Fibrous Type %			Non-Fibrous Type %			Non-Asb Char. Ex. E4			Optical Properties										
2 Gray	5 Red	8 Silver	2 Crushed	2 Amosite	8 Glass	15 Mica																													
3 Tan	6 Various	9 Blue	3 Dissolved	3 Anthophyllite	9 Min. Wool	16 Gypsum	Asbestos Type			% of Asbestos			Other Fibrous Type %			Non-Fibrous Type %			Non-Asb Char. Ex. E4			Optical Properties													
TEXTURE (T)			4 Ashed	4 Tremolite	10 Synthetic	17 Cal. Carbonate																													
1 Fibrous 2 Non-Fibrous 3 Other			5 Heated	5 Actinolite	11 Other	18 Matrix	Asbestos Type			% of Asbestos			Other Fibrous Type %			Non-Fibrous Type %			Non-Asb Char. Ex. E4			Optical Properties													
			6 Molten	6 Crocidolite	12 Wollastonite	19 Perlite																													
HOMOGENEITY (H)			Stereo Asbestos Est. %			Asbestos Type			% of Asbestos			Other Fibrous Type %			Non-Fibrous Type %			Non-Asb Char. Ex. E4			Optical Properties														
1 Homogeneous 2 Heterogeneous 3 OTHER			Asbestos Type			% of Asbestos			Other Fibrous Type %			Non-Fibrous Type %			Non-Asb Char. Ex. E4			Optical Properties																	
Sample			Macrosc.	Treat	Asbestos Type			% of Asbestos			Other Fibrous Type %			Non-Fibrous Type %			Non-Asb Char. Ex. E4			Optical Properties															
P			Non-responsive based on review		5			4.6						20			95.4			1.605 ± R.I. 1.619 ± R.I.															
3/2/2020			Non-responsive based on review																	2 M 1 S															
O			Non-responsive based on review		2			5.3			8 15			20			79.7 M3			1.680 ± R.I. 1.678 ± R.I.															
3/4/2020			Non-responsive based on review																	2 M 1 S															
L			Non-responsive based on review		5			11.1						20			88.9			1.606 ± R.I. 1.619 ± R.I.															
3/5/2020			Non-responsive based on review																	2 M 1 S															
CC			Non-responsive based on review		ND									20			100			2 P 2 B (FC) 6 3 E															
3/6/2020			Non-responsive based on review																	± R.I. ± R.I.															
			(C)											20						± R.I. ± R.I.															
			(T)																	M S															
			(H)														P B (FC)			E															
			(C)											20						± R.I. ± R.I.															
			(T)																	M S															
			(H)														P B (FC)			E															
			(C)											20						± R.I. ± R.I.															
			(T)																	M S															
			(H)														P B (FC)			E															
			(C)											20						± R.I. ± R.I.															
			(T)																	M S															
			(H)														P B (FC)			E															
			(C)											20						± R.I. ± R.I.															
			(T)																	M S															
			(H)														P B (FC)			E															

Analyst:

ate:

3/2/2020

Computer:

27

Date:

Room Temp (C):

EMSL Analytical, Inc.

PLM7.9.2

Page 27 of 53

3/6/2020



## POINT COUNT WORKSHEET

Date: 3/5/2020

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1	1					6
2	1					4
3	1					15
4	1					7
5						
6						
7						
8						
9						
10						
Total	4					32

Results:  $4/32 = 11.1\%$  Asbestos

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Analyst: \_\_\_\_\_

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

CALCULATIONS:  $P = (AP \cdot 100) / TP$

P = Percentage of Asbestos TP = Total number of non-empty Points

AP = number of Asbestos Points

NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"

NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"

# Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Client: .

Logged:

TAT:

QC

Address:

Date/Time Due:

## DAILY REFERENCE SLIDES

Fax:

Project:

Special Instructions

Order Number

Macroscopic			COMPONENT TYPES						MICROSCOPIC			
COLOR (C)			Treatment		Asbestos		Fibrous		Non-Fibrous		Optical Properties	
1 Brown	4 White	7 Black	1 Teased	1 Chrysotile	7 Cellulose	14 Quartz	15 Mica	16 Gypsum	17 Cal. Carbonate	18 Matrix	19 Perlite	20 Other
2 Gray	5 Red	8 Silver	2 Crushed	2 Amosite	8 Glass	15 Mica	16 Gypsum	17 Cal. Carbonate	18 Matrix	19 Perlite	20 Other	
3 Tan	6 Various	9 Blue	3 Dissolved	3 Anthophyllite	9 Min. Wool	10 Synthetic	11 Other	12 Wollastonite	13 Hair			
		10 Yellow	4 Ashed	4 Tremolite								
			5 Heated	5 Actinolite								
			6 Melted	6 Crocidolite								
TEXTURE (T)			Stereo Asbestos Est. %		Asbestos Type		% of Asbestos		Other Fibrous Type %		Non-Fibrous Type %	
1 Fibrous	2 Non-Fibrous	3 Other										
HOMOGENEITY (H)			Non-Asb Char. Ex. E4		Optical Properties		Optical Properties		Optical Properties		Optical Properties	
1 Homogeneous	2 Heterogeneous	3 OTHER										
1 Sample	2 Macrosc.	3 Treat										
3/2/20	Non-responsive based on revised scope				5	10.5			20	89.5	1.605	1.615
3/3/20	Non-responsive based on revised scope				ND				20	100		
3/4/20	Non-responsive based on revised scope				2	6.5			20	93.5	1.680	1.700
3/5/20	Non-responsive based on revised scope				5	6.7			20	93.3	1.605	1.621
3/6/20	Non-responsive based on revised scope				ND				20	100		
(C)									20			
(T)												
(H)												
(C)									20			
(T)												
(H)												
(C)									20			
(T)												
(H)												
(C)									20			
(T)												
(H)												
(C)									20			
(T)												
(H)												

22.12  
22.12  
22.32  
22.40  
22.12

Analyst:

Date:

Computer:

Date:

Room Temp (C):

EMSL Analytical, Inc.

PLM7.9.2



## POINT COUNT WORKSHEET

Date: 3/5/2020

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1	1					17
2	1					12
3	1					16
4	1					11
5						
6						
7						
8						
9						
10						
Total	4					56

COV Results: 6.7% Actinolite

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

CALCULATIONS:  $P = (AP \cdot 100) / TP$

P = Percentage of Asbestos TP = Total number of non-empty Points

AP = number of Asbestos Points

NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"

NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"

Analyst

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

## Microscopy

QC

Date/Time Due:

### Special Instructions

Order Number:

**Project:**

Non-responsive based on re  
Non-responsive based on re  
Non-responsive based on re  
Non-responsive based on re  
Non-responsive based on re  
Non-responsive based on re

Date:

**PLM7.9.2**



## POINT COUNT WORKSHEET

Date: 3/5/2020

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						15
2						20
3						18
4						15
5						
6						
7						
8						
9						
10						
Total						

Results: 555 remove ✓

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Sample:						
PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results: \_\_\_\_\_

Analyst: \_\_\_\_\_

Non-responsive based on revise  
Non-responsive based on revise  
Non-responsive based on revise  
Non-responsive based on revise  
Non-responsive based on revise

CALCULATIONS:  $P = (AP \times 100) / TP$

P = Percentage of Asbestos TP = Total number of non-empty Points

AP = number of Asbestos Points

NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"

NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"



EMSL ANALYTICAL, INC.

## 5. Client and EMSL Internal Chains of Custody

## USEPA CLP COC (LAB COPY)

DateShipped: 2/20/2020

CarrierName: FedEx

AirbillNo: 777817941333

## CHAIN OF CUSTODY RECORD

042004037

DAS #: R35754

Cooler #: K27

No: 3-022020-124148-0001

Lab: EMSL Analytical, Inc.

Lab Contact: Non-responsive based on revised scope

Lab Phone: 856-303-2556

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SS-01	R35754-01	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1050 (None) (1)	P-01	02/19/2020 09:15	
SS-02	R35754-02	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1054 (None) (1)	P-02	02/19/2020 09:37	
SS-03	R35754-03	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1057 (None) (1)	P-03	02/19/2020 10:05	
SS-04	R35754-04	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1060 (None) (1)	P-03	02/19/2020 10:10	
SS-05	R35754-05	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1063 (None) (1)	P-04	02/19/2020 10:20	
SS-06	R35754-06	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1066 (None) (1)	P-05	02/19/2020 10:35	
SS-07	R35754-07	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1069 (None) (1)	P-06	02/19/2020 10:50	
SS-08	R35754-08	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1072 (None) (1)	P-07	02/19/2020 11:15	
SS-09	R35754-09	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1075 (None) (1)	P-08	02/19/2020 11:50	
SS-10	R35754-10	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1078 (None) (1)	P-09	02/19/2020 11:55	
SS-11	R35754-11	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1081 (None) (1)	P-10	02/19/2020 12:20	
SS-12	R35754-12	Soil/ Non-responsive based on revised scope	Grab	Asbest(21)	3-1084 (None) (1)	P-11	02/19/2020 13:25	

Special Instructions: Please return cooler with FedEx return label	Shipment for Case Complete? Y
Analysis Key: Asbest=Asbestos	Non-responsive based on revised scope
Samplers:	Non-responsive based on revised scope
	Non-responsive based on revised scope

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Non-responsive based on revised scope	TechLaw	2/20/20 1700	Non-responsive based on revised scope	7778 Fx 2/21/20	Acceptable 10:40
Non-responsive based on revised scope			Non-responsive based on revised scope		
Non-responsive based on revised scope			Non-responsive based on revised scope		
Non-responsive based on revised scope			Non-responsive based on revised scope		
Non-responsive based on revised scope			Non-responsive based on revised scope		

Fx: 7778 1794 1333

AirbillNo: 777817941333

### CHAIN OF CUSTODY RECORD

042004637

DAS #: R35754

Cooler #: K27

**No: 3-022020-124148-0001**

Lab: EMSL Analytical, Inc

Lab Contact: Non-responsive based

Lab Phone: 856-303-2556

[illegible]

RECEIVED  
JAN 21 1975  
2020 FEB 21 A 10:55

Special Instructions: Please return cooler with FedEx return label	Shipment for Case Complete? Y
Analysis Key: Asbest=Asbestos	Samples Transferred From Chain of Custody #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	<div> <div>Non-responsive based on revised scope</div> <div>Non-responsive based on revised scope</div> <div>Non-responsive based on revised scope</div> <div>Non-responsive based on revised scope</div> <div>Non-responsive based on revised scope</div> <div>Non-responsive based on revised scope</div> </div> <div>TechLaw</div>	<div>2/26/20</div> <div>1700</div>	<div>Non-responsive based on revised scope</div> <div>Non-responsive based on revised scope</div> <div>Non-responsive based on revised scope</div> <div>EmsL</div>	<div>2-21-20</div> <div>10:40 am</div>	<div>Acceptable</div>

# INTERNAL CHAIN OF CUSTODY

Order ID: 042004637

2/21/2020 12:12:26 PM

Attn: **non-responsive based on review**  
TechLaw Inc.  
139 Peninsula St.  
Wheeling, WV 26003

Fax: Phone: (304) 230-1230  
Project: **DAS #R35754**

Customer ID: TCHL75  
Customer PO:  
Received: 02/21/20 10:40 AM  
EMSL Order: 042004637  
EMSL Proj ID:  
Cust COC ID: 3-022020-124148-0001  
Project Type: Asb Special Project

## REPORT TO INSTRUCTIONS

- ☐ Send Receipt Confirmation Emails  
☐ No electronic signatures  
Billing Frequency  
With Report -- Create and send an invoice for each Order ID  
Accounting Terms: N30  
Sales Rep and Comment: jsilverman
- ☐ Project ID required  
☐ Cust. COC ID required  
☐ Miscellaneous account

Billing Frequency

With Report -- Create and send an invoice for each Order ID

Accounting Terms: N30

Sales Rep and Comment: jsilverman

Instructions

Internal Comment

## BILL TO INSTRUCTIONS

- ☐ Exempt from prep charge  
☐ Exempt from off hour min charges  
☐ Exempt from layer/aliquot charges
- ☐ Authorization to use credit card  
☐ P.O. Required

Billing Frequency

With Report -- Create and send an invoice for each Order ID

Use Billing Contact:

Accounting Terms: N30

Payment Directions: With Report

Instructions

**Test:** PLM 400 Point Count w Milling **Matrix** Bulk **TAT:** 2 Week **Qty:** 19  
**Desc:** Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/11 **Logged:** 2/21/2020  
☐ Lab Opening Exempt For Test ☐ Prep Charge Exempt For Test **Signoff:** 2/21/2020  
☐ Layer/Aliquot Charge Exempt For Test ☐ Free Shipping Eligible **Sample Condition:** ☐ Acceptable ☐ Unacceptable

Comments

Please use NADES bench  
Sheets & enter results in iLab

**Prepped:** 2/24/20 **Date**  
**Analyzed:** 3/5/20 **Date**  
**Data Entry:** 1/1 **Date**  
**Screened:** PK **Date** 3/6/20  
**Mailed:** **Date**  
**Scanned Internal Docs:** **Date**

## Special Test Instructions

Lab Sample #	Cust. Sample #	Location	Due Date
042004637-0001	SS-01	P-01	3/6/2020 10:40:00 AM
042004637-0002	SS-02	P-02	3/6/2020 10:40:00 AM
042004637-0003	SS-03	P-03	3/6/2020 10:40:00 AM
042004637-0004	SS-04	P-03	3/6/2020 10:40:00 AM
042004637-0005	SS-05	P-04	3/6/2020 10:40:00 AM
042004637-0006	SS-06	P-05	3/6/2020 10:40:00 AM
042004637-0007	SS-07	P-06	3/6/2020 10:40:00 AM
042004637-0008	SS-08	P-07	3/6/2020 10:40:00 AM

## INTERNAL CHAIN OF CUSTODY

**Order ID: 042004637***2/21/2020 12:12:26 PM*

Attn: **non-responsive based  
non-responsive based**  
TechLaw Inc.  
139 Peninsula St.  
Wheeling, WV 26003

Fax:   
Project: **DAS #R35754**

Phone: (304) 230-1230

Customer ID: TCHL75  
Customer PO:  
Received: 02/21/20 10:40 AM  
EMSL Order: 042004637  
EMSL Proj ID:  
Cust COC ID 3-022020-124148-0001  
Project Type: Asb Special Project

Lab Sample #	Cust. Sample #	Location	Due Date
042004637-0009	SS-09	P-08	3/6/2020 10:40:00 AM
042004637-0010	SS-10	P-09	3/6/2020 10:40:00 AM
042004637-0011	SS-11	P-10	3/6/2020 10:40:00 AM
042004637-0012	SS-12	P-11	3/6/2020 10:40:00 AM
042004637-0013	SS-13	P-12	3/6/2020 10:40:00 AM
042004637-0014	SS-14	P-12	3/6/2020 10:40:00 AM
042004637-0015	SS-15	P-13	3/6/2020 10:40:00 AM
042004637-0016	SS-16	P-14	3/6/2020 10:40:00 AM
042004637-0017	SS-17	B-15	3/6/2020 10:40:00 AM
042004637-0018	SS-18	B-16	3/6/2020 10:40:00 AM
042004637-0019	SS-19	B-17	3/6/2020 10:40:00 AM



EMSL ANALYTICAL, INC.

## 6. Equipment Performance Checks



# PLM Calibration & Contamination Records

Lab ID: 04

PLM Scope #: PLM-04-0011

Date Range: 03/05/2020 to 03/05/2020

Daily									Monthly	
Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Record	
									Wavelength (nm) (Amosite DS)	
03/05/2020	Non-responsive DS Non-responsive DS Non-responsive DS	✓	✓	✓	✓	✓	1			⊥



# PLM Calibration & Contamination Records

Lab ID: 04

PLM Scope #: PLM-04-0019

Date Range: 03/05/2020 to 03/05/2020

Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Monthly Record	
									Wavelength (nm) (Amosite DS)	
03/05/2020	Non-responsive bar Non-responsive bar Non-responsive bar	✓	✓	✓	✓	✓	2			⊥



# PLM Calibration & Contamination Records

Lab ID: 04

PLM Scope #: PLM-04-0025

Date Range: 03/05/2020 to 03/05/2020

Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Daily		Monthly	
											Record	Wavelength (nm) (Amosite DS)
03/05/2020	non-responsive based on rev non-responsive based on rev non-responsive based on rev	✓	✓	✓	✓	✓	3					⊥



# PLM Calibration & Contamination Records

Lab ID: 04

PLM Scope #: PLM-04-0027

Date Range: 03/05/2020 to 03/05/2020

Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Daily		Monthly Record Wavelength (nm) (Amosite DS)
03/05/2020	Non-responsive based Non-responsive based Non-responsive based	✓	✓	✓	✓	✓	2				



EMSL ANALYTICAL, INC.

## 7. NVLAP/AIHA Certifications

United States Department of Commerce  
National Institute of Standards and Technology



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**Certificate of Accreditation to ISO/IEC 17025:2017**

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NVLAP LAB CODE: 101048-0

**EMSL Analytical, Inc.**  
Cinnaminson, NJ

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

**Asbestos Fiber Analysis**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2019-07-01 through 2020-06-30

*Effective Dates*




For the National Voluntary Laboratory Accreditation Program

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**

**EMSL Analytical, Inc.**  
200 Route 130 North  
Cinnaminson, NJ 08077

Phone: 800-220-3675 Fax: 856-786-5973  
Email: @emsl.com  
<http://www.emsl.com>

**ASBESTOS FIBER ANALYSIS**

**NVLAP LAB CODE 101048-0**

**Bulk Asbestos Analysis**

<u>Code</u>	<u>Description</u>
18/A01	EPA – 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

**Airborne Asbestos Analysis**

<u>Code</u>	<u>Description</u>
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

For the National Voluntary Laboratory Accreditation Program



**AIHA**

Laboratory Accreditation  
Programs, LLC

## AIHA Laboratory Accreditation Programs, LLC

*acknowledges that*

### **EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

### **LABORATORY ACCREDITATION PROGRAMS**

- ✓ **INDUSTRIAL HYGIENE**
- ✓ **ENVIRONMENTAL LEAD**
- ✓ **ENVIRONMENTAL MICROBIOLOGY**
- ☐ **FOOD**
- ☐ **UNIQUE SCOPES**

Accreditation Expires: November 01, 2020

Accreditation Expires: November 01, 2020

Accreditation Expires: November 01, 2020

Accreditation Expires:

Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website ([www.aihaaccreditedlabs.org](http://www.aihaaccreditedlabs.org)) for the most current Scope.

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

*Elizabeth Bair*  
Chairperson, Analytical Accreditation Board

*Cheryl O. Morton*  
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 17 – 09/11/2018

Date Issued: 11/30/2018



## AIHA Laboratory Accreditation Programs, LLC

### SCOPE OF ACCREDITATION

**EMSL Analytical, Inc.**  
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**  
Issue Date: 11/30/2018

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

### Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 02/01/1989

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (for internal methods only)
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1003 Modified	
			NIOSH 1005 Modified	
			NIOSH 1400 Modified	
			NIOSH 1500 Modified	
			NIOSH 1501 Modified	
			NIOSH 1550 Modified	
			NIOSH 1603 Modified	
			NIOSH 2000 Modified	
	GC/MS	GC/ECD	NIOSH 5502 Modified	
			NIOSH 5503 Modified	
			NIOSH 5510 Modified	
			OSHA 1010 Modified	
	GC/MS		EPA TO-15	
	Gas Chromatography (Diffusive Samplers)		NIOSH 1501 Modified	
	Ion Chromatography (IC)		NIOSH 6004 Modified	
			NIOSH 6011	
			NIOSH 7903	
			OSHA ID-214	
	Liquid Chromatography	HPLC/FL	OSHA ID-215 Modified	
			NIOSH 2016 Modified	
			NIOSH 5506 Modified	
		LC/MS	NIOSH 9111 Modified	



IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (for internal methods only)
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009 Modified	
			OSHA ID-140 Modified	
			OSHA ID-145	
		FAA	NIOSH 7082	
		GFAA	NIOSH 7105	
	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300 Modified	
		ICP/AES	NIOSH 7300 Modified	
	X-ray Diffraction (XRD)		NIOSH 7500 Modified	
			OSHA ID-142 Modified	
Asbestos/Fiber Microscopy Core	UV/VIS (Colorimetric)		NIOSH 6010 Modified	
	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		EPA AHERA - 40 CFR Part 763	EPA AHERA Method (40 CFR 763, Subpart E, Appendix A, Mandatory Method)
			NIOSH 7402	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5524	
	Thermo-optical Analysis (TOA)		NIOSH 5040	
Beryllium Testing	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300	
			NIOSH 7303	

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



EMSL ANALYTICAL, INC.

## 8. Customer Correspondence

**Exhibit A - SCOPE OF WORK**  
**Asbestos Analysis by PLM**  
**TechLaw-Wheeling Project No. R35754**

1. Laboratory will provide containers for the number of samples and matrices specified in the attached Exhibit B – RFQ Bid Sheet. The containers will be shipped to the TechLaw-Wheeling, WV office. The sampling is scheduled to be conducted on February 18-21, 2020. *The sample containers must be shipped to arrive no later than February 17, 2020.*
2. The laboratory must be NVLAP certified.
3. The samples will be analyzed for asbestos by polarized light microscopy (PLM) using EPA 600/5/93/116 (or equivalent). Sample preparation will include milling similar to procedures in CARB 435; however, milling should be discontinued as soon as the material being milled appears homogeneous, in order to reduce the potential for mechanically reducing fiber size. This should be documented in the lab narrative report. The lab will perform a 400-point counting procedure (maximum of eight slides with 50 counts each to minimum of two slides with 200 counts each) to achieve a reporting limit for asbestos in soil at 0.25%, if feasible. Analytical results are to be reported below the reporting limit (RL) down to the method detection limit. The Target Analyte List (TAL) of asbestos fibers/materials is presented in **Attachment 1**.
4. **TAT:** Request 10 business days TAT for all Level II reports and 15 business days TAT for the Level IV (CLP-like) reports and electronic data deliverables (EDDs) in the National Asbestos Data Entry Spreadsheet (NADES) format.
5. **Data Deliverables:** Level II report, Level IV (CLP-Like) data package, and EDD (in NADES format). The Level IV data package should include documentation required for independent, third party data validation in accordance with *USEPA PLM VALIDATION PROCESS GUIDELINES For Asbestos Data Review*, OLEM Directive 9200.2-179, October 2016. **Attachment 2** provides the documentation that will be required in the Final/Level IV data package. The EDD will be in the NADES format.
6. **Sampling schedule:**  
  
The sampling is scheduled for February 18-21, 2020.
7. **Bid due date:** Friday, February 7, 2020 at 1:00 p.m. EST. Bids should be submitted electronically to Gene Nance at: [gene.nance@techlawinc.com](mailto:gene.nance@techlawinc.com).

**NOTE:** *Bid price should include cost of analysis, shipping fee (to Wheeling, WV), data package, and any other associated costs (e.g., waste disposal, taxes, etc.).*

Attachments



EMSL ANALYTICAL, INC.

## 9. Shipping Documentation

Non-responsive based on revised  
Non-responsive based on revised  
Non-responsive based on revised  
Non-responsive based on revised  
Non-responsive based on revised

SHIP DATE: 20FEB20  
ACTWGT: 45.00 LB  
CAD: 10x122780/INLT4220  
DIMAS: 23x14x16 IN

**BILL SENDEK**

WHEELING, WV 26003  
UNITED STATES US

Non-responsive based on revised score  
Non-responsive based on revised score  
Non-responsive based on revised score  
Non-responsive based on revised score

(856) 303-2556

REF: WE:RT ONBOP

NO  
PO

(b)(2)



**PRIORITY OVERNIGHT**

TRK0  
0201

**7778 1794 1333**

**XB WWDA**

**08077**

NJ-US PHL



**CUSTODY SEAL**  
Signature \_\_\_\_\_  
Date 2/26/20  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope



**CUSTODY SEAL**  
Signature \_\_\_\_\_  
Date 2/26/20  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope  
Non-responsive based on revised scope

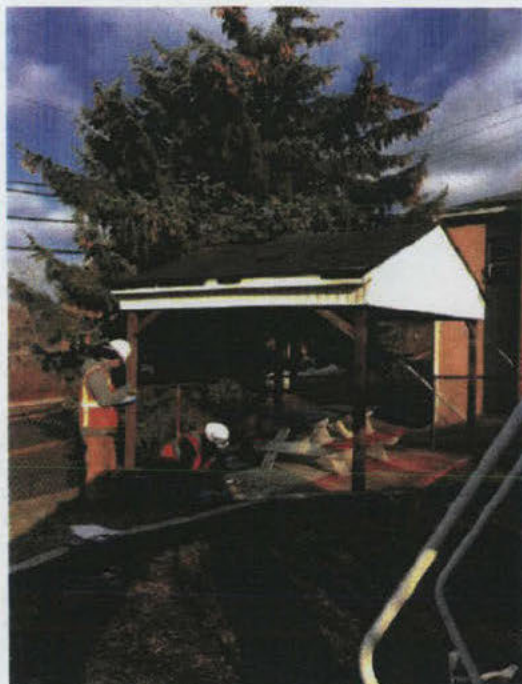


TechLaw, Inc.  
START 5 Region III  
EP-S3-15-03

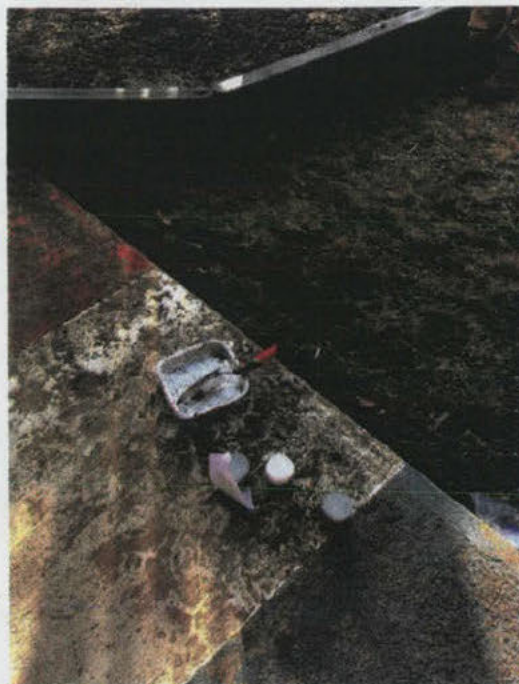
Weirton BOP Implosion Site  
Removal Assessment Trip Report  
Revision: Draft  
May 12, 2020

**ATTACHMENT 5**  
**PHOTOGRAPHIC DOCUMENTATION**

# Weirton BOP Implosion Site Photolog for February 19, 2020



2/19/2020  
Photo No. IMG\_6802; Taken on 02/19/20 at 9:06 hours by START [REDACTED] Facing NW. MR collecting Soil sample from first sample point, BE collecting GPS data. CP06, SS-01



2/19/2020  
Photo No. IMG\_6804; Taken on 02/19/20 at 9:18 hours by START [REDACTED] Facing Down. First soil sample location, looking at the area disturbed during sample collection, sample tools and sample jars. CP06, SS-01



2/19/2020  
Photo No. IMG\_6805; Taken on 02/19/20 at 9:34 hours by START [REDACTED] Facing N. Facing North looking at a utilities building and fenced in area where sample was collected along the fence line. CP08, SS02



2/19/2020  
Photo No. IMG\_6807; Taken on 02/19/20 at 9:52 hours by START [REDACTED] Facing ESE. Facing in a southeasterly direction, observing the runoff pathways from the building roof down the slope of the hill. CP08, SS-02

## Weirton BOP Implosion Site Photolog for February 19, 2020



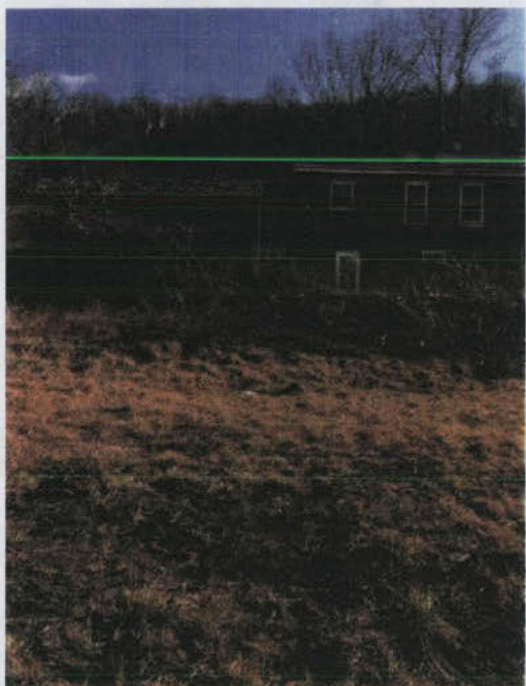
2/19/2020

Photo No. IMG\_6811; Taken on 02/19/20 at 10:04 hours by STAR [REDACTED]. Facing W. Facing West, MR collects soils from property R11, BE collects GPS coordinates. R11, SS-03



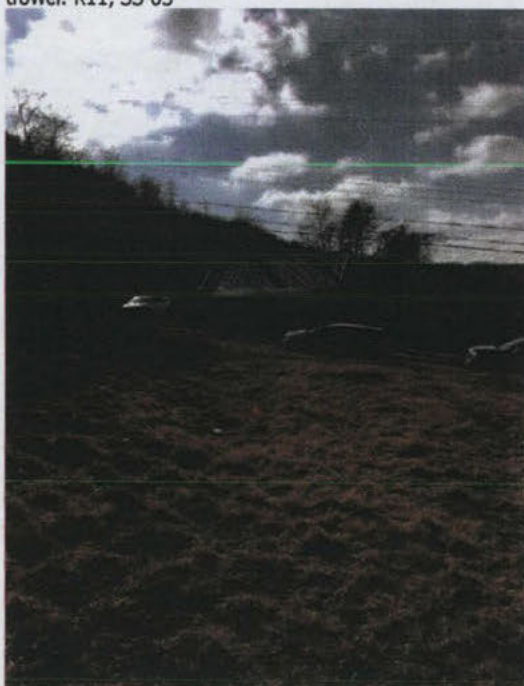
2/19/2020

Photo No. IMG\_6814; Taken on 02/19/20 at 10:11 hours by STAR [REDACTED]. Facing Down. Facing Down at the location where soils were collected from a 0-3" interval with a dedicated SS trowel. R11, SS-03



2/19/2020

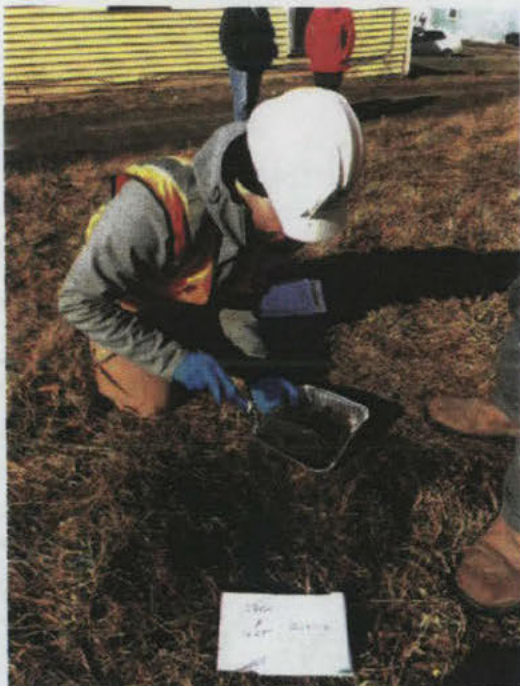
Photo No. IMG\_6819; Taken on 02/19/20 at 10:30 hours by STAR [REDACTED]. Facing E. Looking up-slope from alley way that bounds the east side of the property, pin flag marks sample location. R10, SS-05



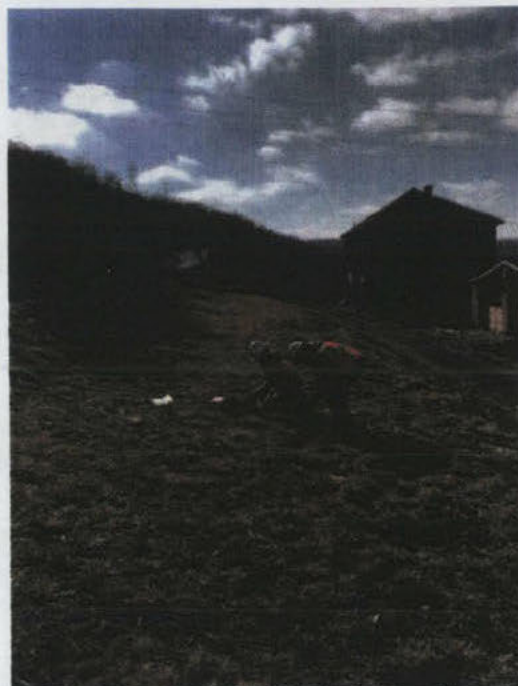
2/19/2020

Photo No. IMG\_6820; Taken on 02/19/20 at 10:31 hours by STAR [REDACTED]. Facing S. Facing south on property R10, pin flag placed in slight depression where soil sample was collected. R10, SS-05

# Weirton BOP Implosion Site Photolog for February 19, 2020



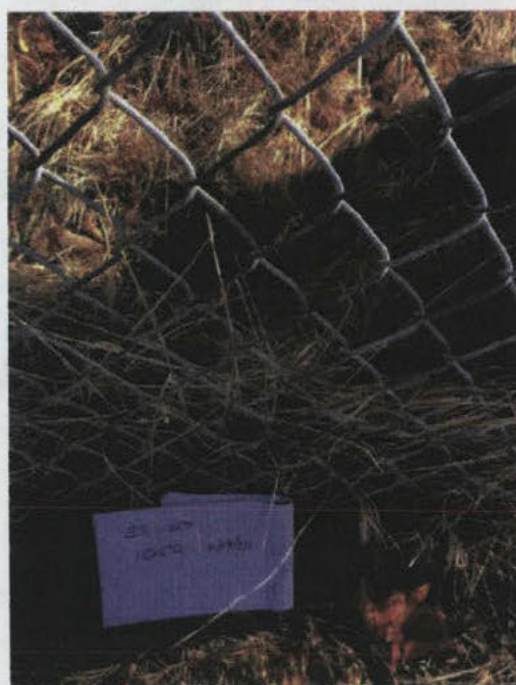
2/19/2020  
Photo No. IMG\_6821; Taken on 02/19/20 at 10:34 hours by START [redacted] Facing Down. BE collects soils from R12 property location, MR collects GPS coordinates. R12, SS-06



2/19/2020  
Photo No. IMG\_6822; Taken on 02/19/20 at 10:35 hours by START [redacted] Facing S. BE collects soils from R12 property location, MR collects GPS coordinates. R12, SS-06



2/19/2020  
Photo No. IMG\_6825; Taken on 02/19/20 at 10:48 hours by START [redacted] Facing E. Facing east, looking up-slope, drainage pathway from house. MR collects sample from parcel CP07, BE collects GPS coordinates. CP07, SS-07



2/19/2020  
Photo No. IMG\_6828; Taken on 02/19/20 at 10:51 hours by START [redacted] Facing Down. Looking down at the sample collection location, just on the other side of the fence that rings the community basketball court. CP07-SS-07

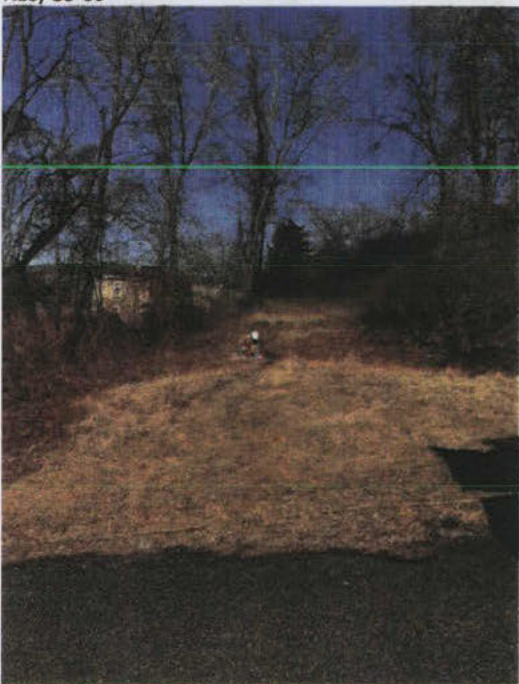
# Weirton BOP Implosion Site Photolog for February 19, 2020



2/19/2020  
Photo No. IMG\_6830; Taken on 02/19/20 at 11:16 hours by STAR **Not Here**. Facing W. Facing down slope towards Weir Ave. MR collects soil sample from parcel R13, BE collects GPS coordinates. R13, SS-08



2/19/2020  
Photo No. IMG\_6833; Taken on 02/19/20 at 11:21 hours by STAR **Not Here**. Facing Down. Looking down at the sample collection location. R13, SS-08

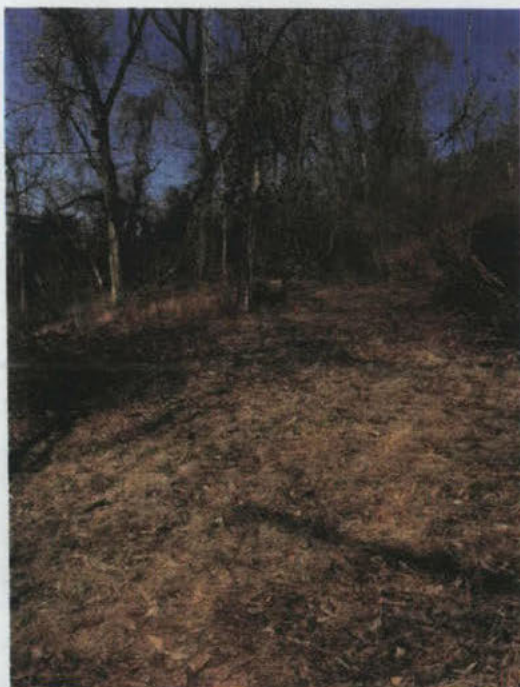


2/19/2020  
Photo No. IMG\_6834; Taken on 02/19/20 at 11:45 hours by STAR **Not Here**. Facing N. BE collects soil sample from property R05, SS-09




2/19/2020  
Photo No. IMG\_6835; Taken on 02/19/20 at 11:46 hours by STAR **Not Here**. Facing Down. Looking down, BE collects sample, utilizing dedicated SS trowel and aluminum pan for homogenization. R05, SS-09

# Weirton BOP Implosion Site Photolog for February 19, 2020




2/19/2020

Photo No. IMG\_6839; Taken on 02/19/20 at 12:05 hours by STAR1  Facing NE. Facing Northeast on property R01, pin flag marks the sample location along a possible wildlife trail through the underbrush. R01, SS-10




2/19/2020

Photo No. IMG\_6840; Taken on 02/19/20 at 12:06 hours by STAR1  Facing W. Facing west on property R01, pin flag marks sample location, looking down towards Weir Ave. R01, SS-10.




2/19/2020

Photo No. IMG\_6842; Taken on 02/19/20 at 12:18 hours by STAR1  Facing N. Facing north, BE collects soils sample from property R06, MR collects GPS coordinates. Possible yard, due east from old foundation remains. R06, SS-11



2/19/2020

Photo No. IMG\_6844; Taken on 02/19/20 at 12:19 hours by STAR1  Facing SW. Facing southwest, BE utilizes dedicated SS trowel and aluminum pan to collect sample. R06, SS-11

## Weirton BOP Implosion Site Photolog for February 19, 2020



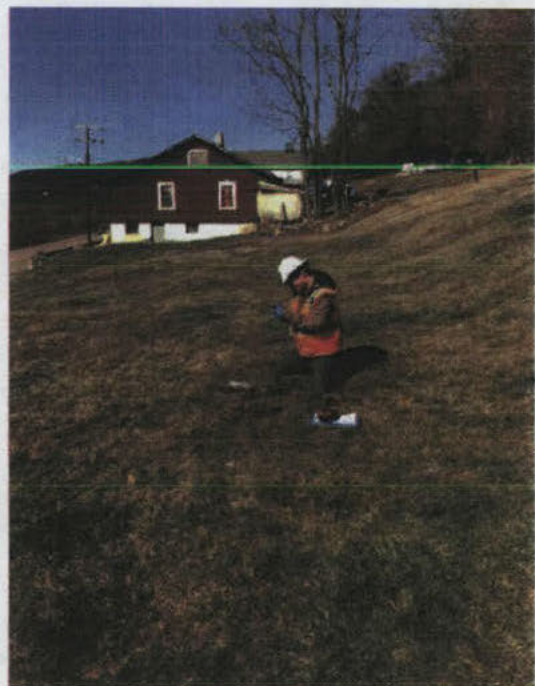
2/19/2020  
Photo No. IMG\_6847; Taken on 02/19/20 at 1:23 hours by STAR [REDACTED]. Facing W. Looking down slope, towards Weir Ave. BE collects soil sample. Former BOP site is just beyond Weir Ave. part of foundation is visible in pic, R09, SS-12



2/19/2020  
Photo No. IMG\_6849; Taken on 02/19/20 at 1:24 hours by STAR [REDACTED]. Facing E. BE collects soils from R09 property location, MR collects GPS coordinates. R09, SS-12

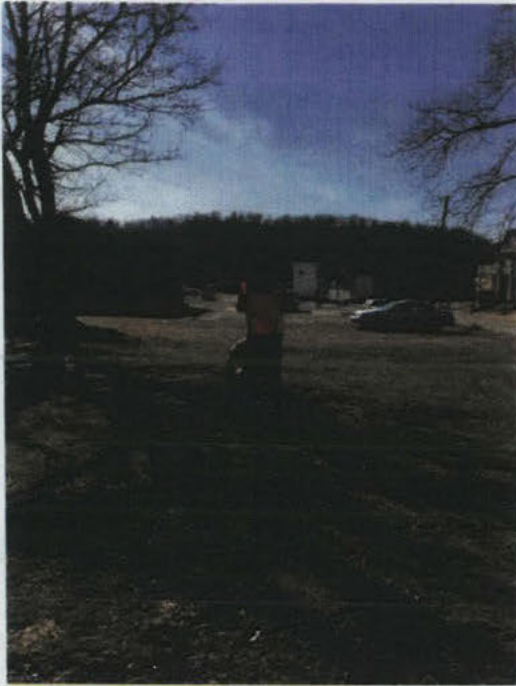


2/19/2020  
Photo No. IMG\_6852; Taken on 02/19/20 at 1:35 hours by STAR [REDACTED]. Facing Down. MR collecting soils from vacant lot, utilizing SS trowel and aluminum pan for homogenization. R08, SS-13



2/19/2020  
Photo No. IMG\_6853; Taken on 02/19/20 at 1:35 hours by STAR [REDACTED]. Facing N. MR collecting soils from vacant lot, utilizing SS trowel and aluminum pan for homogenization. R08, SS-13

## Weirton BOP Implosion Site Photolog for February 19, 2020



2/19/2020

Photo No. IMG\_6856; Taken on 02/19/20 at 2:06 hours by START [redacted] Facing WSW. BE collects soils from CP01, MR collects GPS coordinates. CP01, SS-15



2/19/2020

Photo No. IMG\_6859; Taken on 02/19/20 at 2:07 hours by START [redacted] Facing Down. BE collects soils using a dedicated SS trowel and aluminum pan for soil homogenization. CP01, SS-15



2/19/2020

Photo No. IMG\_6861; Taken on 02/19/20 at 2:22 hours by START [redacted] Facing Down. MR collects soils using a dedicated SS trowel and aluminum pan for soil homogenization. CP03, SS-16



2/19/2020

Photo No. IMG\_6862; Taken on 02/19/20 at 2:22 hours by START [redacted] Facing E. MR collects soils from CP03, BE collects GPS coordinates. CP03, SS-16

## Weirton BOP Implosion Site Photolog for February 19, 2020



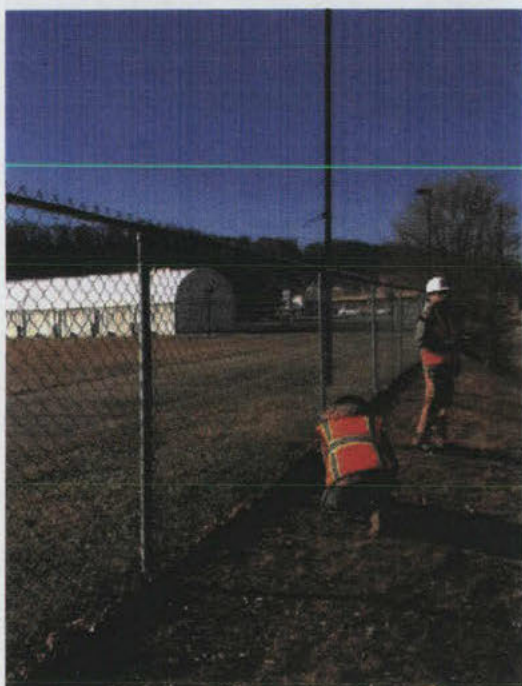
2/19/2020

Photo No. IMG\_6864; Taken on 02/19/20 at 2:46 hours by STAR [REDACTED] Facing E. BE collects soils from CP09, MR collects GPS coordinates, background sample location. CP09, SS-17



2/19/2020

Photo No. IMG\_6866; Taken on 02/19/20 at 2:47 hours by STAR [REDACTED] Facing Down. BE collects soils using a dedicated SS trowel and aluminum pan for homogenization. Background sample location. CP09, SS-17



2/19/2020

Photo No. IMG\_6868; Taken on 02/19/20 at 3:08 hours by STAR [REDACTED] Facing WNW. MR collects soils from CP11 property, BE collects GPS coordinates. Background sample location. CP11, SS-18



2/19/2020

Photo No. IMG\_6869; Taken on 02/19/20 at 3:08 hours by STAR [REDACTED] Facing Down. MR utilizing a dedicated SS trowel and aluminum pan for soil homogenization. Background sample location. CP11, SS-18

## Weirton BOP Implosion Site Photolog for February 19, 2020



2/19/2020

Photo No. IMG\_6872; Taken on 02/19/20 at 3:31 hours by START [redacted] Facing NW. BE collects soils just north of a community basketball court located at the north end of Orchard Lane, background sampling location. CP10, SS-19



2/19/2020

Photo No. IMG\_6873; Taken on 02/19/20 at 3:31 hours by START [redacted] Facing S. BE collects soils from CP10 property, background sampling location. CP10, SS-19